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1893-94
PT. 1



[Whole Number 221]

REPORT

OF THE

COMMISSIONER OF EDUCATION

FOR

THE YEAR 1893-94.

VOLUME 1.

CONTAINING PART I.

WASHINGTON:
GOVERNMENT PRINTING OFFICE,
1896.

THE UNITED STATES
BUREAU OF EDUCATION.

*Created as a Department March 2, 1867.
Made an Office of the Interior Department July 1, 1869.*

COMMISSIONERS.

HENRY BARNARD, LL. D.,
March 14, 1867, to March 15, 1870.

JOHN EATON, Ph. D., LL. D.,
March 16, 1870, to August 5, 1886.

NATHANIEL H. R. DAWSON, L. H. D.,
August 6, 1886, to September 3, 1889.

WILLIAM T. HARRIS, Ph. D., LL. D.,
September 12, 1889, to date.

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REPORT OF THE COMMISSIONER OF EDUCATION.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, D. C., June 20, 1895.

SIR: I have the honor to submit herewith my sixth annual report, the same being for the year ending June 30, 1894.

WHOLE NUMBER OF PERSONS ENROLLED IN SCHOOLS AND COLLEGES.

There were enrolled in the schools and colleges of the United States, both public and private, during the school year 1893-94, 15,530,268 pupils and students, being an increase of 446,638 over the preceding year. A detailed classification of these pupils and students is given on pages 3 to 6. In addition, there were some 400,000 persons enrolled in various special schools and institutions, such as business colleges, trade schools, conservatories of music, schools of art and elocution, schools for the delinquent and defective classes, Indian schools, etc., making a grand total of nearly 16,000,000 persons who attended a school of some kind for a longer or shorter period during the year.

THE COMMON SCHOOLS.

The term "common schools" is understood by this office to include public elementary and secondary (or high) day schools. The statistics of the different State common-school systems, compiled from data furnished by State superintendents, are given in detail in Chapter I. The following table contains a condensed summary of the common-school statistics, with the corresponding figures for 1892-93 in a parallel column:

GENERAL STATISTICS.

	1892-93.	1893-94.	Increase (+) or decrease (-).	Per cent of increase or decrease.
<i>I.—General statistics.</i>				
Population of the United States (estimated).....	66,087,900	67,891,380	+ 1,803,480	+ 2.73
Number of persons 5 to 18 years of age (estimated)	19,552,491	20,086,423	+ 533,932	+ 2.73
Number of different pupils enrolled in the common schools.....	13,510,719	13,935,977	+ 425,258	+ 3.15
Per cent of population enrolled.....	20.45	20.53	+ .08	.....
Per cent of persons 5 to 18 years of age enrolled..	69.10	69.39	+ .29	.....
Average daily attendance.....	8,855,717	9,187,505	+ 331,788	+ 3.75

GENERAL STATISTICS—Continued.

	1892-93.	1893-94.	Increase (+) or decrease (—).	Per cent of increase or decrease.
<i>I.—General statistics—Continued.</i>				
Ratio to enrollment.....	65.54	65.92	+	.38
Average length of school term in days.....	136.7	139	+	2.3
Aggregate number of days' attendance.....	1,210,754,931	1,277,037,178	+	66,282,247
Average number for each person 5 to 18 years of age.....	61.9	63.6	+	1.7
Average number attended by each pupil enrolled.....	89.6	91.6	+	2
Male teachers.....	122,056	124,768	+	2,712
Female teachers.....	260,954	263,239	+	2,285
Whole number of teachers.....	383,010	388,007	+	4,997
Per cent of male teachers.....	31.9	32.2	+	.3
Average monthly wages of teachers in 40 States:				
Male.....		\$44.76		
Female.....		\$37.48		
Number of schoolhouses.....	235,426	236,529	+	1,103
Value of school property.....	\$398,435,039	\$425,024,841	+	\$26,589,802
<i>II.—Finances.</i>				
Receipts:				
Income of permanent funds.....	\$8,674,945	\$8,486,052	—	\$188,893
From State taxes.....	\$32,694,813	\$33,074,152	+	\$379,339
From local taxes.....	\$108,425,054	\$111,255,258	+	\$2,830,204
From other sources.....	\$14,228,070	\$14,235,930	+	\$7,860
Total revenues.....	\$165,022,882	\$167,051,892	+	\$2,028,510
Per cent of the total revenue derived from—				
Permanent funds.....	5.3	5.1	—	.2
State taxes.....	20.4	19.8	—	.6
Local taxes.....	65.7	66.6	+	.9
Other sources.....	8.6	8.5	—	.1
Expenditures:				
For sites, buildings, furniture, libraries, and apparatus.....	\$31,439,580	\$29,237,231	—	\$2,202,349
For salaries of teachers and superintendents.....	104,090,607	108,520,730	+	4,430,123
For other purposes.....	27,813,091	32,626,212	+	4,813,121
Total expenditure.....	163,343,278	170,384,173	+	7,040,895
Average expenditure per capita of population.....	2.47	2.51	+	.04
Average expenditure per capita of average at- tendance:				
For sites, buildings, etc.....	3.55	3.18	—	.37
For salaries.....	11.76	11.81	+	.05
For other purposes.....	3.14	3.56	+	.42
Total.....	18.45	18.55	+	.10
Per cent of the total expenditure devoted to—				
Sites, buildings, etc.....	19.2	17.2	—	2.0
Salaries.....	68.7	63.7	—	0
Other purposes.....	17.1	19.1	+	2
Average amount expended per month for each pupil:				
For salaries only.....	\$1.72	\$1.70	—	\$0.02
For all purposes.....	2.70	2.67	—	.03

It will be observed that there was an increase during the past year of 425,258, or 3.15 per cent in the number of pupils enrolled in the common schools. This is an unusual rate of growth, the average annual increase for the ten years ending with 1892-93 having been only about 286,000. It is worthy of note that this well-marked gain in school attendance occurred during a period of widespread business depression, and it speaks well for the people that they endeavor to make up for the loss occasioned by irregular and uncertain wages by sending to school not only the younger children at such times, but also their older children, thrown out of occupation as wage earners.

The percentage of the total population enrolled in the schools was 20.53, as compared with 19.67 in 1879-80, and 20.32 in 1889-90. That is to say, in every 10,000 persons there are now 86 more enrolled in the common schools than in 1880.

Another noteworthy gain was that of 2.3 day's length of the school term, which is now 139 days, or nearly 10 days longer than in 1880. The average number of days attended by each pupil enrolled, however, was only 91.6, or about two-thirds of the time the schools were in session.

There was an increase of 2,712 in the number of male teachers, and 2,285 in the number of female teachers. The percentage of male teachers (32.2) shows an increase the first time in a number of years, another item to be explained by the business depression, men having less reason to desert the calling of teacher and venture in more lucrative employments.

The increase in the number of schoolhouses was only 1,103, while the total value of school property gained over \$26,000,000. These figures would seem to indicate that much of the expenditure for schoolhouses had been devoted to the improvement and enlargement of existing buildings.

In a former report I have discussed the question of the average total amount of schooling given to each individual in the nation. I have had a comparative table made, showing this item for each division of the country and for the whole United States, for the years 1870 and 1880, and for each year in the present decade.

The table includes the items of higher and special education which were omitted in my former estimate. For 1891 I found the result to be 4.3 years for each citizen. But by including these items the average is increased to 4½ years.

Average total amount of schooling (including all grades, public and private) each individual of the population would receive under the conditions actually existing at the different dates given below.

[Amount of schooling being expressed in years of 200 school days.]

	1870.	1880.	1890.	1891.	1892.	1893.	1894.
United States	3.32	3.59	4.41	4.51	4.41	4.48	4.63
North Atlantic Division	4.98	5.77	5.94	6.04	6.08	6.09	6.32
South Atlantic Division	1.20	2.13	2.68	2.72	2.68	2.73	2.90
South Central Division	1.09	1.81	2.48	2.60	2.02	2.58	2.88
North Central Division	4.00	4.75	5.28	5.37	5.14	5.30	5.30
Western Division	3.46	4.06	4.44	4.65	5.00	4.83	4.92

The following table gives the same item, omitting the private schools and all higher and special education :

Average total amount of schooling received per inhabitant, considering only public elementary and secondary schools.

[Expressed in years of 200 days each.]

	1870.	1880.	1890.	1891.	1892.	1893.	1894.
United States	2.91	3.45	3.85	3.93	3.97	3.99	4.13
North Atlantic Division.....	4.43	4.84	4.99	5.06	5.10	5.10	5.28
South Atlantic Division.....	0.80	1.90	2.42	2.46	2.46	2.51	2.70
South Central Division.....	0.78	1.57	2.20	2.31	2.41	2.38	2.64
North Central Division.....	3.71	4.19	4.67	4.74	4.75	4.84	4.85
Western Division.....	2.77	3.57	3.98	4.16	4.46	4.39	4.49

THE GROWTH OF CITIES.

The disproportion between the percentages of population of the North and of the South found in cities makes its influence felt in the item of total average school attendance, and hence calls our attention to the influence of cities on the length of school sessions and the location of schools at convenient distances. In the North Central, and North Atlantic divisions the number of cities having over 8,000 inhabitants was, in 1890, 351, the same being an increase of 118 over the number in 1880. In the South Atlantic and South Central States the number of cities had increased in the same decade from 42 to 73.

The city brings together the producer and the consumer. In the city the raw material brings the highest price, and the manufactured product is found at its cheapest price.

The city makes combinations; it seeks out the producer and buys his product, selling him its equivalent of the merchandise of the world. The city thus connects the people of its environment with the world. The family that produces for itself its own food, clothing, and shelter is living on a low plane of civilization. It should produce some specialty for the market of the world, and exchange it for a share in all the productions of mankind. Such process of exchange is like a sacramental consecration. Each person consumes or partakes of the product of the world of universal human society; each, himself, contributes to the supply of all others. It is this process of intercommunication of each with all that is the essence of civilization.

The family that produces all that it consumes does not enjoy luxury or culture as the result of its labor. But when it has access to the market of the world through the mediation of the city, then it may have endless variety in what it consumes. By the division of labor, skill and productive power are increased, so that the share of each person is multiplied. Hence, each gets more than he gives to the world market. It is a sort of living mirror of grace—by giving one's product to the world, one gets in return manifold. Hence this mediation of one's labor by aid of the world market may be called a sacrament.

Here is seen the vast significance of the school education in enabling the citizen who shares in the productions of his fellow-men to know his fellows and understand their views of the world. It enables him to know their opinions, and to share in their spiritual as well as in their material productions. It enables him to participate in the formation of national and international public opinion.

The type of modern city, coming into existence since the days of steam and electricity have made cheap and rapid transportation possible, is that of a compact business center and a wide area of suburban residence extending out from the city's center to a distance of 5, 15, or even 25 miles. The evils of city life in the middle ages were due to lack of sewerage, lack of a supply of pure water, and the consequent poisoning of the air in the dwellings, which were poorly lighted and ventilated. The city of the future, and indeed the city of the present, is a vast improvement. The death rates in London have been reduced to an average below that of most rural districts.

It is the destiny of all civilization to increase the number and size of its cities. It is the necessary result of the invention of machinery and the labor-saving devices which flow from new discoveries in science, for the city is the necessary resort of the surplus laborers no longer needed on the farm. Not so many people are needed to procure the raw materials of food, clothing, and shelter, but more and more people are required to turn these raw materials into articles of comfort and luxury; more and more people to work at transportation and intercommunication, and more persons in the work of giving culture to the rest. The savage tribe, unaided by machinery, can allow but one person for the production of ornament—nearly all are needed for the supply of food and clothing of the plainest sort. But the partly civilized tribe can afford ten persons for the production of ornament and luxury. The proportion increases rapidly as we ascend in the use of machinery, and the time is arrived now when more than a hundred in a thousand are needed for the production of ornament and luxury.

In transportation and intercommunication by means of railroads, telegraphs, postal systems, newspapers, books, libraries, schools, and churches—the line rises from mere transportation through intercommunication up to culture. In these employments more and more of the population will find occupation.

Instead of ninety-nine drudges producing raw material and one person working to furnish and diffuse directive intelligence, it will come to pass in the distant future that one man will, by the aid of machinery, furnish the raw material, another man's labor will make the useful articles for food, clothing, and shelter, ten more will elaborate articles of comfort and luxury, the rest, more than 80 per cent of the community, will take up vocations having to do with protection and culture. With the growth of cities, therefore, there is a rapid increase of educational facilities.

In the past twenty years the South has increased 54 per cent in population, but its school attendance has increased 130 per cent—that is to say, more than twice as fast as the population. This means that there is a larger proportion of the population kept in school during the year. While in 1874 an average of $14\frac{1}{2}$ out of every hundred were enrolled in school, ten years later (1884) the average had risen to $18\frac{3}{4}$ per hundred, and in 1894, or twenty years later, the number enrolled is 22 in the hundred. Of all the people of the South, white and black, 1 in 5 is in attendance on school for some portion of the year. In the twenty years from 1874 to 1894 the value of school property increased from \$16,000,000 to \$51,000,000—an addition of \$40,000,000, or \$2,000,000 a year. It built better school buildings and adopted modern improvements to such an extent that while in 1874 the average value of a schoolhouse in the South was only \$373, in 1894 the value had risen to \$643.

Higher education has also a good record. It did not have so far to climb as the elementary schools for all classes of people. But while in 1874 the number of college students for the South numbered 10,103, in 1894 the number is 25,304, or two and one-half times as many.

Turning to the important subject of race education, we find that the statistics are still more to the credit of Southern statesmanship.

In 1876 the South had an enrollment in its schools of 571,506 colored children, and 1,827,139 white children. More than half a million colored children were in actual attendance on school for some portion of the year. But in 1894, eighteen years later, the white pupils had increased to 3,835,593, while the colored pupils had increased to 1,424,995. The increase of white pupils for the eighteen years was 109 per cent, while that of the colored was 150 per cent. Twenty-three out of every 100 white inhabitants are enrolled in school, and 19 out of every 100 of the colored inhabitants.

But with this fine showing as to numbers, it appears from the statistics here presented that the length of the school term is not yet up to the average. The average number of days in which schools are taught is, for the whole nation, one hundred and thirty-nine days, while the average number of days for the South Atlantic Division of States is only one hundred and six, and for the South Central Division only ninety-three days. But the South had in twenty years increased its school term twelve days. With the growth of cities and large villages here discussed, the length of the annual school session will increase until it is quite as long as that of the North Atlantic States. The city schools keep their doors open about two hundred days. In the agricultural districts there is a winter session of seventy to ninety days, and in many cases a shorter summer session. It is this that makes the average school years so short in the South.

In the rural districts of New England the school term was only seventy-five days, as a usual thing, until the growth of large villages and cities

with their ten-month schools finally created a public sentiment which now insists on long terms for all districts.

The best device yet discovered to help the schools in sparsely settled districts is the payment of cost of transportation by the school committee and the consolidation of districts. The children from outlying districts are brought to the town center, where a large, well-graded school is kept up for two hundred days of the year. The cost of transportation for the pupils living more than a mile away is not so great an item as the cost of furnishing teachers and school buildings for half a dozen pupils each.

In the small rural school no classification can be attempted, and for the most part the pupils never get beyond the rudiments of reading, writing, and arithmetic. With good classification the city teacher can teach from 40 to 60 pupils well. In the ungraded school not even 16 to 30 pupils can be well taught.

This increase of graded schools explains how it is that in the South, with a great increase of expenditures and with a much longer school session, the average cost per pupil is not materially increased. Twenty years ago it was \$8.40; last year it was only \$8.62. But the pupil receives now better accommodations, better instruction, and a longer school session than then, and the newly established training schools are sending into the work thousands of professional, trained teachers.

It is interesting to note the effects of urban growth and the increase of schools in the South on the wealth and productive power.

The wealth is estimated as follows by the United States Census:

South Atlantic States:

1890	\$5, 132, 980, 666
1880	3, 759, 000, 000
Increase	<u>1, 373, 980, 666</u>

South Central States:

1890	6, 401, 281, 019
1880	3, 882, 000, 000
Increase	<u>2, 519, 281, 019</u>

Education has produced a laboring class that can use machinery to assist the strength of bone and muscle. It has made possible the great change of vocations from the production of mere raw materials to the production of the finished product. This is a change going on in all civilized countries. The machine is coming in at one end, and the mere drudge is going out at the other. The uneducated, unskilled man is not needed, for his hands and muscles can not compete with the machine. He is needed, however, in the work of directing the machine, and is therefore called upon to step up from the occupation of the mere drudge to the occupation of the overseer. The change from hand work to brain work is a necessity. But this can not go on without schools that fit the pupils out with alert and versatile intelligence.

Even in the fertile fields of the South unskilled labor does not bring good wages. But the skilled laborer in the city, using tools and directing machinery, earns and receives an average of double the wages that the farm hand gets.

Machinery is going out from the city to the farm; and the farm, too, needs fewer laborers, and can furnish more productions. The surplus farmers must go into mechanical industries, into transportation, and commerce. Fewer and fewer people are needed for the production of the raw materials of food, clothing, and shelter all the world over, thanks to mechanic inventions, which are pushing the mere illiterate drudge out of his vocation. He must climb to the plain of the skilled laborer or else starve in his attempt to compete with the machine.

A school system makes possible a change of vocations among its people. It puts alertness and versatility in place of mere brute strength and persistency. More than this, the school puts aspiration and ambition into its pupils. It lifts the veil of distance in time and place, and shows them the achievements of the race. "You, too, can achieve the like." The school next proceeds to teach the sciences by which the wonders of the world have been accomplished; mathematics, the tool of thought, by which matter is moved and forces are tamed into the service of man; history, and geography, and grammar, and literature, by which man comes to know men, and gains the ability to combine with them in civilized effort.

The work of education is the direct work of helping individuals to help themselves.

Small as is the schooling given by the nation to its people, some four and one-half years apiece, it suffices to make reading and writing universal, and in addition to these gives also a limited acquaintance with the rudiments of arithmetic and geography. This fits the citizen to become a reader of the daily newspaper, and thus to bring him under an educating influence that will continue throughout his life. A newspaper civilization is one that governs by means of public opinion. The newspaper creates public opinion. No great free nation is possible except in a newspaper civilization. By aid of the printed page the school-educated person makes present to himself daily the events of the world and lives an epic life, for the epic life is the life of nations. A certain portion of the day of each citizen is given to contemplating world events, and to discussing them. He sees the doings of his State and nation, and forms his own opinion. His opinion in the aggregate, with those of his fellow-citizens, is collected and offered to the world by the newspaper. Our schools suffice to produce a government by public opinion. This is a result of a higher order than the other good results which we have canvassed as among the benefits to the South of the education which it is giving to its children. To give people the power to readjust their vocations and to climb up to better-paid and more useful industries out of lives of drudgery is a great thing, a suffi-

cient reason in itself for establishing a public-school system. But to give the people the power of participating in each other's thoughts, to give each one the power to contribute his influence to the formation of a national public opinion, is a far greater good, for it looks forward to the millennium, when no wars will be needed for the mediation of hostile ideas.

SECONDARY SCHOOLS.

In Chapter 3 will be found a fuller presentation of the statistics of secondary education than ever before attempted by this Bureau. In Part III of this annual report more than half the space is occupied with detailed tables relating to public and private secondary schools. There will be found the names and the usual statistics of 5,946 public high schools reporting to this office in 1894. This is an increase of 1,700 over the number reporting in 1893. A special effort was made to secure returns from all the public high schools in the United States, and it is believed that only a small per cent failed to report. The total number of secondary students in these schools is 407,919, an increase of 78,821 over the number reported in 1893. In 1894 there were 3,964 public high schools, with 289,274 students, and 1,982 private high schools, with 118,645 students. One must not suppose that there has been within a year or even two years any such increase as these figures would indicate, although the growth of secondary schools within five years has been remarkable. The Bureau has reached out and gathered in statistics of all public and private high schools that could be persuaded to send reports to this office. Many of the schools are new and many more have been in existence for several years.

The tables in Chapter 3 are very full and comprehensive. The deductions drawn from them will prove of deep interest to those who are watching the development of secondary education in this country. The results of the work of these secondary schools, both public and private, indicate steady improvement. For example, there was relative increase in the number graduating in 1894 over 1893, and a comparison of the percentages of students pursuing the ten leading secondary studies shows marked advancement. The per cent of students in Latin increased from 43.06 to 44.78 in the public high schools and from 39.23 to 40.77 in the private secondary schools. The per cent studying algebra in the public schools was 52.88 in 1893 and 56.14 in 1894, while in the private schools the increase was from 42.75 to 44.37. There was an almost imperceptible decrease in the per cent of students in Greek in the public schools and an insignificant falling off in the percentage of students in German, but for all the other high-school studies the percentages are higher for 1894 than for 1893.

A bird's-eye view of the statistics of secondary schools for 1894 is given in Table 20. This table, in connection with the six full-page diagrams in the same chapter, will convey a clear idea of the comparative

importance and present standing of public and private secondary schools. Table 25 shows the distribution of the 480,358 secondary students reported to this Bureau in 1894.

HIGHER EDUCATION.

Universities and colleges.—The statistical summaries of universities and colleges are given on pages 91–118. They show the number of institutions reporting as 476, there being one institution for every 131,559 persons. The number of professors and instructors was 10,897, of which number 13.8 per cent were women. The average number of instructors per institution was 23. The students reported were as follows: Preparatory, 45,188; collegiate, 60,415; resident graduates, 3,026; nonresident graduates, 993; professional, 21,265; total in all departments, 143,632. Of the total number, 24.5 per cent were women and 4.9 per cent were colored.

The home residence of collegiate students in 447 universities and colleges has been collected and tabulated in a summarized form. From the data thus obtained the proportion of the population of the several States attending college has been computed and represented graphically.

The value of the entire equipment of the universities and colleges is given as \$212,181,552, of which amount \$98,527,052 are endowment funds. The total income was \$15,365,612, of which amount 33.1 per cent was derived from tuition fees, 34.3 per cent from productive funds, 17 per cent from national, State, and municipal appropriations, and the remainder, or 10.6 per cent, from miscellaneous sources. The benefactions during the year amounted to \$9,025,240.

Colleges for women.—The 166 colleges for women reporting to this office, and not included in the list of 476 above referred to, had, in 1893–94, 2,460 instructors and 23,707 students. Of the 15 fellowships reported, Byrn Mawr College holds 11. The benefactions to colleges for women amounted to \$369,183.

Colleges of agriculture and the mechanic arts.—The number of students reported by the 63 institutions endowed by the acts of Congress of July 2, 1862, and August 30, 1890, was 17,230, of which number 4,568 were in preparatory departments, 12,358 in collegiate departments, and 354 in graduate departments. The total income reported by these institutions was \$5,991,101.40, of which amount 36.6 per cent was received from the General Government, either as income from the funds realized by the sale of lands granted by the act of July 2, 1862, or as appropriated by the acts of March 2, 1887, and August 30, 1890. The present condition and progress of these institutions during the year under review, as reported by the several presidents, may be found in the third section of Chapter IV.

University extension.—Chapter VI of Part II presents the work in university extension during the year as reported to this office by the

various agencies. Included in this chapter are interesting accounts of the work in Ohio by Prof. Willis Boughton, and in New Jersey by Dr. Austin Scott, president of Rutgers College; also a report of the School of Applied Ethics.

Professional education.—The number of students in theological schools was 7,658. Presbyterians had the largest number, 1,375; Catholics come second with 1,250, followed in order by the Baptists, Lutherans, and Methodists. In comparison with the number of members, Congregationalists come first.

There are 67 law schools, with 7,311 students. The legal profession of this country wields an immense influence in all matters that pertain to State, national, and municipal politics. They constitute mainly our public officers—legislative, judicial, executive—both State and national. Notwithstanding this, it seems that the qualifications for entering the legal profession are as low, if not lower, than for any other profession. The requirements for graduation from law schools, too, are less rigid than from any other class of professional schools. The fault lies not with the schools. They can not demand high attainments when so many States practically require no special attainments for legal practice. The American Bar Association has in recent years undertaken efficient means to enlighten public opinion on this important theme.

There are 152 medical colleges, with 21,802 students—17,601 regular, 1,666 homeopathic, 803 eclectic, 1,732 graduate, etc. The process of raising the standard of medical education still continues. The Association of American Medical Colleges a few years ago lengthened the course to three years of not less than six months each. In 1894 they again raised the standard to four years for all students entering upon the study of medicine in 1895 or subsequently. Moreover, nearly half the States require a State medical examination, while many others have strict regulations.

There are 88 schools of dentistry and pharmacy each, with 4,152 dental students and 3,658 students of pharmacy.

The statistics of normal schools are summarized in Chapter IV. There were 80,767 students in training courses for teachers in five classes of institutions; 37,899 in 160 public normal schools, 27,995 in 238 private normal schools, 5,500 in pedagogical courses in 173 colleges and universities, 5,041 in teachers' training courses in 153 public high schools, and 4,332 in similar courses in 137 private high schools. The public and private normal schools sent out 8,271 graduates in 1894. There is reported a very large increase over the previous year in the amount of appropriations from States, counties, and cities for the support of public normal schools for 1894. In 1893 the appropriations for this purpose amounted to \$1,452,914, and in 1894 the aggregate was \$1,996,271. This increase was due in part to the increase in the number of schools reporting. In like manner there was an increase in the amount appropriated for building from \$816,826 in 1893 to \$1,583,399

in 1894. One of the interesting things noted in the chapter on normal schools is the increase in the number of students in pedagogical courses in universities and colleges. In 1891 the number of such students was 3,978, and in 1894 the number reported was 5,500, an increase of more than 38 per cent in three years.

Chapter V presents the statistics of schools and colleges in Great Britain and Ireland for 1893, so far as these are attainable. The absence of special statistics of secondary schools in the kingdom is noticeable. Until this gap is filled, international comparison with respect to the scholastic influences by which nations are most deeply affected must be exceedingly partial and unsatisfactory. It is hoped that the supply of this data will be one outcome of the royal commission now deliberating over the problems of secondary education.

From the comparative statistics of elementary education in England presented in the chapter, it appears that in the period from 1876 to 1893 the accommodation in elementary day schools increased 70 per cent, the enrollment 74 per cent, and the average attendance 106 per cent. The increase in the population during the same time was 22.6. For the somewhat shorter period, 1880 to 1893, Scotland shows an increase of 22.5 per cent in school accommodation, of 24.4 per cent in enrollment, and 34 per cent in average attendance. The population in the same time increased by 10.4 per cent. The high rate of increase in enrollment in England calls to mind the dearth of school provision and the alarming degree of illiteracy which gave rise to the agitation resulting in the school law of 1870. The first purpose of the law, i. e., the bringing of school privileges within the reach of all children, has been accomplished. In the matter of school enrollment, England now occupies a leading position, $17\frac{1}{4}$ of the population being included in the school registers. Scotland had no such deficiencies to overcome. Here the passage of the school law (1872) was simply a measure for adjusting the school system to modern conditions; even here, however, the increase in school attendance is greater than the increase in population. The slightly smaller proportion of the population enrolled in Scotland than in England ($16\frac{1}{4}$ as against $17\frac{1}{4}$ per cent) is due to the smaller attendance of the infants (i. e., children under 7 years of age) in the northern division of the Kingdom.

Among other interesting facts brought to view by the comparative table is the increase in the adult teaching force, with the accompanying decline of the pupil-teacher system. The gradual elevation of the ideal of elementary instruction is of scarcely less importance than the steady effort to make adequate school provision. This developing ideal appears from the survey of changes in the conditions under which schools may share in the Government grant.

The latest regulations (i. e., for 1895¹) practically put an end to the system of "payment upon results." Similar changes have taken place

¹ Received at the time this report is going through the press.

also with respect to evening schools, which in the great cities are rapidly assuming the character of evening high schools.

In an article on "Industrial schools versus juvenile crime," cited in the chapter, Mr. A. A. W. Drew, an official of long experience in the work, makes many pertinent suggestions on the relation of truancy to juvenile criminality and the nature of corrective agencies.

The chapter closes with a tabular summary relating to state-aided colleges, which are the latest outcome of the sense of public responsibility with respect to popular education.

Chapter VI deals with education in France. As regards the system in general, no official information has been published since the issue of my last annual report. The detailed view of primary instruction presented in Chapter VI is condensed from the latest report of the government statistical commission.¹ The report covers the periods 1887 to 1892, maintaining at every point comparison between the beginning and the end of the half decade.

On the whole, the condition of primary instruction appears to be very satisfactory. The school provision of the country for children of the obligatory school age—6 to 13 years—is nearly complete, and is supplemented by infant schools and adult schools, which are liberally supported. The enrollment in primary schools (5,471,402) is a little more than 14 per cent of the population, a ratio relatively about the same as in neighboring countries, although absolutely less. The inequality is due to the fact that the ratio of school population to total population in France (12 per cent) is below the normal. The maintenance of a high standard of preparation, both professional and scholastic, is a characteristic feature of the primary teaching force.

Of the men teachers less than 1½ per cent were without a teacher's diploma or a university degree in 1891-92, and of the women only 12½ per cent without diploma. The public schools surpass the private in the proportion of teachers having diplomas, the ratios being respectively 98 and 82 per cent. With regard to certain other particulars the showing is less favorable. As compared with 1886-87 there has been a slight decline in school enrollment, in round numbers 55,000, or a little less than 1 per cent. This is in part accounted for by the decline in the school population (three-tenths per cent) during the same time. Increased attendance upon the primary classes of secondary schools and temporary causes would account also for a part of the loss in the primary schools. Still, with all the conditions in view, the commission express the opinion that the compulsory law (1882) is not so strictly enforced as at the beginning of the period reviewed. The schools that have suffered loss are either private secular or public clerical schools, chiefly the latter.

¹For advanced sheets of this report the office is indebted to M. E. Levasseur, president of the commission.

Naturally, all the data bearing upon the relative strength of public and private, or, more particularly, of secular and church schools, are carefully analyzed by the commission. The public schools derive their support from the Government, and are intended to be nurseries of patriotism; private schools, although subject to Government inspection, are free from Government control; they may even foster social and political sentiments at variance with the Government.

Whatever be the general course of the private schools in these respects, the church schools are naturally opposed to the Government policy of secular education, hence they afford a means of measuring the strength of that policy. In 1892, private schools of all classes enrolled 23 per cent of the pupils in elementary schools as against 20 per cent in 1887. The gain has been wholly in the church schools, which enrolled 20 per cent of the pupils at the later date as against 17 per cent at the earlier. The change is due chiefly to the transfer of boys from public schools owing to the enforcement of the law prohibiting the further employment of teachers belonging to religious orders. The time allowed for the execution of the law in schools for boys expired in 1891. It is yet too early to decide what the ultimate outcome of the law may be; meanwhile the immediate effects are watched with deep interest.

Average attendance, as the term is understood in the United States, is an item that does not appear in French reports. Instead of this the attendance on two days, one at the season of highest average and the other at the season of lowest, is reported. Comparison in this respect between 1887 and 1892 shows a slight decline at the later date. The increased attendance upon superior primary or high schools, about 20 per cent in five years, and the increasing number of pupils securing the certificate of primary studies and the high-school diploma (an increase of 30,000 in the former case and 600 in the latter) are adduced among the excellent results of the spread of popular instruction. In this connection, also, is noted the decreasing ratio of illiterate conscripts, there having been 89.7 per cent able to read and write in 1886 as against 92.6 in 1891.

The criminal statistics of the country have been carefully analyzed by the commission with a view to showing what they disclose, if anything, as to the relations of crime and education. With the spread of public instruction, the proportion of illiterate criminals necessarily declines; the statistics indicate, however, that the standard of attainments on the part of criminals is very low. It appears also from the results of the prison schools that a certain proportion of criminals, about 15 per cent, are incapable of profiting by instruction. The current expenditure for primary education increased about 7 per cent during the half decade, reaching, in round numbers, \$37,200,000. The increase in the proportion of the expenditure borne by the State, i. e., from 49 per cent to 68 per cent, was caused by the State assuming the

payment of teachers' salaries. This has been done with a view to securing a fair minimum salary to all teachers and perfecting the organization of the service.

The fact, however, that school attendance decreases while the central Government increases its efforts for the improvement of the schools, throws some doubt on the wisdom of the centralizing policy. Possibly a larger measure of local responsibility would increase local enthusiasm for the schools. It is difficult to draw conclusions from conditions totally unlike those that prevail in our own country. It appears, however, that while a centralized authority is more favorable for the inception of reforms in a system of education, it does not insure greater stability or efficiency than is attainable through local influences.

Chapter VII, on "Education in Central Europe," begins with a brief mention of the previous publications of the Bureau on the subject of public education in Germany, Austria, and Switzerland.

Then follows an article on "Results of Prussian common-school statistics," which is prepared from Professor Tews's elaborate exposé of that subject. The school authorities of most German States publish summaries of school statistics only at intervals of three or more years; the last one of Prussia received was published in the year 1891. The official statements were used in the reports of this Bureau without comment. But since then a number of weighty criticisms have appeared which place the statistical facts offered in the proper focus and analyze them from the standpoint of present necessities. No hostile motives prompted these efforts, for the minister of public education himself frankly admitted in the House of Deputies that "he was still struggling to obtain the daily bread with which to maintain the schools."

The author, Prof. J. Tews, of Berlin, discusses the statistics of elementary schools and teachers of Prussia. He shows ability in grouping, analyzing, and presenting statistical data, and hence his statements are readily accepted by the press of Germany and other countries. In his statements concerning the school population and overcrowding of class rooms he goes into statistical details, and his comparisons reveal new and interesting data. For instance, it appears that in 1886 Prussia had still 17,744 ungraded rural schools, with 1,146,701 children; while in 1891 the number of such schools had decreased to 16,600, with only 969,598 children. There is a general increase in the grading of schools going on in Prussia.

The comparisons between the east and west sections of the Kingdom are very noteworthy and instructive. In city schools the average number of class rooms to the school varies between 6 and 25. The most surprising fact brought out is that within nine years the number of teachers needed and not supplied has increased from 6,000 to 12,000, and that the proportion of teachers to the number of classes has decreased from 91 per cent to 80 per cent. The showing in regard to the number of pupils to one teacher appears better, because while in

1882 the number of pupils to each teacher was 72.4, in the year 1890 it was exactly 70.

School attendance in Prussia is another prominent subject of which hitherto very little has been accurately known. The author notes a marked improvement. He also shows that the salaries of teachers have greatly increased, although he is unable to prove them adequate as yet. The comparison made by the author reveals that the Protestant schools have made more rapid progress than the Catholic schools. Over these conditions the State has no control, since elementary education is, and has ever been, so far as organization is concerned, a matter belonging strictly to local communities. It is only in the supervision of the instruction and the distribution of State funds that the State takes a hand in the management. The upper grades of elementary schools, the so-called intermediate or middle schools of Prussia, are then compared, and the comparison proves fruitful. This class of schools is very dear to the average citizen, representing as it does the most advanced state of elementary education.

A very curious and, indeed for our conditions here in America, interesting fact is revealed in the comparison of nationalities as represented by the language spoken in the families of the school population of Prussia. It shows that there is still a large percentage of the population of the State who speak Polish only, or Danish only, amounting to about 10 per cent of the population.

Like the foregoing facts, the statement concerning the proportions in which State and community meet the expenditures attract our attention. The statistician, Mr. Mulhall, recently published the statement that the United States paid about \$2.50 per capita of population for its schools, while Germany paid only 50 cents. The official statistics of Prussia show that this is erroneous, because the 50 cents per capita represent only the contribution of the State as such, communities and other agencies paying 42 per cent of the expenses. This would raise the amount to nearly \$1. Tuition fees, receipts from school funds and endowments and from church exchequers amount to a great deal more, so that the per capita in Prussia, which is by no means the largest per capita in Germany, amounts to nearly \$1.50.

Accepting Mr. Mullhall's consideration of the purchasing power of money in Germany as compared with that of America, it is reasonable to say that there is little difference between the \$1.50 paid in Prussia and the \$2.50 quoted for America. Mr. Tews concludes his article with the statement fully upheld by the facts preceding it, that an improvement of common schools is, and ever will be, a question of finance.

In the second part of this scrutiny of Prussian school statistics, the conditions of the teachers are spoken of. The author has much to say on the question of parentage of teachers in Prussia. Is it true, that these are chiefly from the lower strata of society? The official statistics make an attempt at social definitions which seem reasonable. The

following statement is the general result: The 62,273 men and 8,439 women teachers come, in 22,701 cases, from the agricultural population; in 20,409 cases from the industrial population; in 7,190 cases from the commercial population; and in 18,740 cases from the professional population.

Also with reference to creeds, the statistics of teachers are reviewed. Then follows an attempt at grouping the teachers according to their age. Tables are given which may be used in this country as a basis of comparison in future computations.

The question of sex in teaching is less ably treated for the obvious reason that the fact only lately begins to impress itself upon the German educational authorities that women are particularly well fitted for the teaching of primary grades. Various other points of interest may be left unnoticed in this introduction.

The author mentions, however, the great discrepancy in the expenditure for elementary schools, as compared with those for secondary and higher institutions of learning. His calculation shows that every elementary school child costs the State \$7.08 a year. Every student in the intermediate schools costs \$21.66. A student in a secondary school costs \$26.89, and one in the universities \$148.75.

After this statistical exposé a brief article on the attendance in secondary schools in Germany is offered which is based on the publications and statistical survey made for the World's Fair in Chicago. This has a particular interest to teachers in secondary schools in this country, since it reveals the fact that the proportion of students in secondary schools is about 5 per cent of the entire school population.

A survey of the courses of study pursued in history in secondary schools found in vogue in Germany is opportune because the courses of study in secondary schools are made the subject of more thorough study in this country. The facts offered are given by Professor Baar, of Malmedy, Rhenish Prussia.

For the history of education a bibliography of German books is added. This is a continuation of similar work begun in previous reports. This bibliography contains only books of recognized literary value. Mere magazine articles are omitted.

An exhibit of the statistics of the university libraries in the several countries of Europe shows nearly six million volumes in Germany, two and one-half millions in Italy, and a less number in each of the other countries. It is to be remarked, however, that in Great Britain and France the public libraries (British Museum, Liverpool Public Library, for example) make up for the deficiencies of the universities, if indeed the figures are correct for those countries.

Among the appliances for teaching which every university offers its teachers and students the library takes the front rank. A statistical summary of the number of volumes in these libraries, their actual expenditures, and, so far as possible, the number of books used in a

given year, throws light upon the degree of scientific equipment of the institutions and offers a useful ratio of comparison.

The chapter contains also a survey of the common schools of Berlin which exhibits in characteristic features the growth and improvements of that city school system. It is a memorial prepared for the dedication of the two hundredth city common-school building by one of the assistant school superintendents, Dr. Zwick. This memorial contains a great amount of local history, and the part which shows how the common school has gradually arisen from the so-called city pauper school proves that the German common school is not older than the American common school; that, indeed, the idea of a school common to all classes of society is not a German creation at all.

Professor Mischler, of Strasburg, the statistician, has collected a number of summaries of public education from all the civilized countries of the world, placed them in juxtaposition and compared them with reference to a few leading items, namely, attendance, expenditure, illiteracy, etc. He has done this for periods of thirty, forty, or fifty years, as far as obtainable, and endeavored to show the ratio of progress in various countries. Naturally, he has been limited to very few items, because the science of statistics itself scarcely dates back farther than the beginning of school registers in the present generation. The final results and conclusions at which he arrives are hopeful and encouraging.

The growth of the Italian people, from the time when Italy was the field of contest for other nations to the date of a united Italy, is shown in Chapter VIII, by Dr. Hinsdale, professor of pedagogy in Michigan University. In the annual report of this Bureau for 1890-91 an excellent exhibit of education in Italy was prepared by Professor Oldrini, and additional matter of great value was furnished by the director of the royal statistical bureau of Italy, Signor Luigi Bodio, who courteously proffered his aid on his visit to this country to attend the session of the International Statistical Association held in Chicago (1894). Famed as Italy was for centuries in the matter of higher education, its people's schools were neither numerous nor well attended until comparatively recent times. From northern Italy, where the most progressive movements originated, popular education has gradually advanced southward. The Casati law, enacted by the Sardinian Parliament in 1859, furnished the first basis of educational progress, and, with modifications, it has been adopted in each province as it became a part of the political unity. The unification of Italy with its provinces, one by one wrested from foreign invaders, was the first step toward the present conditions, where, in a country burdened with debt and supporting an enormous army and navy, over \$23,000,000 annually is spent for education.

The centralization of the administration and educational forces in Rome, with the King as the executive, gave an impetus to educational effort. Through the department of public instruction, with its ramifi-

cations into the various provinces, his majesty is cognizant of and takes interest in all progressive measures throughout Italy, and this very centralization of authority has aided in securing popular education throughout the Kingdom.

In 1861, omitting Venetia and Rome (the former subject to Austria, the latter to the Pope), the illiteracy of the inhabitants above 20 years of age was 73.50 per cent; twenty years later (1881) this had decreased to 63.45 per cent. In 1891 the percentage of illiterates of all ages was 55; from 12 to 20 years, 42; and the marriage registers show only 28.39 per cent for men and women in northern Italy.

The number of pupils in public elementary schools has doubled since 1862. In that year 1,008,674 pupils were reported in 21,353 schools; in 1892, 2,266,593 pupils in 49,217 schools. In the last five years (1887-1892) training schools for teachers have increased from 135 to 149; pupils from 11,060 to 18,020.

Education is not compulsory above the elementary grades, yet the classical schools (ginnasio and licei, corresponding to our high schools and academies and including our first two years of college) had 71,751 students in 1891-92, and the technical schools and institutes 40,928 students in 1890-91. Seeking classical training in 1881, students, 63,860; seeking technical training for practical life in 1880, students, 28,069.

The 21 universities show an accelerated increase in number of pupils; in 1856 a student population of 9,449, in 1882 of 12,919, in 1891-92 increase to 17,792. The faculties of law and medicine had and have the largest number of students—5,330 in law in 1888, in medicine 8,018; in 1892 there were 5,442 law students, 7,326 in medicine and surgery, and 1,452 in pharmacy.

Special attention is called in this article to the growth of the public schools in Rome during a twenty-years' period. The development is noticeable in point of numbers, in the variety of schools, and range of instruction. In 1870 there were 41 schools and 6,291 pupils; in 1890, 142 schools and 26,149 pupils. The cost of the schools of Rome in 1871 was 579,375 lire (\$111,819); in 1889 it was 2,760,816 lire (\$522,837).

Developing with "the new political Italy" there has been "a new educational Italy;" there is now "a national system of education," "born of national spirit," "coextensive with the national territory." Practical training and scientific instruction now interest the people "in the land of the Renaissance," where also "the classical tradition was always strong."

The subject of education in Russia was presented at some length in my report for 1890-91 (pp. 194-262). Attention was called to the complex conditions with which the authorities have to deal in their efforts to educate a people of which only 79.89 per cent are Russians; 8.11 per cent belong to the Aryan races from the East; 2.67 per cent to the Semitic races; 9.17 per cent to the Finnish and Tartar groups; 0.17 per cent to other races. Special attention was directed to the

form of government—the mir, or village community (of which there were 107,493 in European Russia), whose affairs are regulated in a general assembly of all the heads of families of the mir or village; to the Russian system of village industries suited to the locality, and to the reform movements in Russian universities which tend to more thoroughly nationalize these institutions.

The following brief statement epitomizes the above facts; it presents a total of 6.9 per cent of children of school age in school in 1875 and of 11 per cent in 1888, an increase in 13 years of 4 per cent. Thus it appears that there were 93.1 per cent of children of school age who were not in school in the former year and 89 per cent in the latter year. According to reports, only 2 per cent of the aggregate population are at school, and only 20 per cent of the recruits can read and write. School officials—curators, directors, etc.—have been called to St. Petersburg to discuss the subject, and, as a result, compulsory attendance is to be enforced from the beginning of 1895 in the “governments” of Charkov, Poltava, Kursk, and Woronetz.

It is stated that “a rural school-teacher averages about \$8.82 salary for a winter’s teaching.” The teacher has lodging and board, however.

Special effort is being made to nationalize (or “Russianize”) all schools. This is particularly noticeable in the Dorpat district, where the German element predominates; a Russian inspector has now taken the place of the rector of the university, student societies have been prohibited, and the Russian language is to be used in giving instruction.

A commission, or number of committees, is engaged in devising the best means to be adopted in founding a system of education for the whole Empire. One committee has acted as agent for the distribution of needed school books. In 1894 the number distributed was 51,500, of which 86 per cent went to the “governments” of Central Russia, where the Zemstvos, or provincial assemblies, were endeavoring to improve their schools. Another committee aided in the establishment of school libraries; another is engaged in collecting statistical information so as to more thoroughly present the educational needs of different subdivisions of the Empire.

From the remotest period to the accession of Peter the Great the social organization of Russia was based on the patriarchal idea—women being excluded from school privileges. Catherine the Second was the first sovereign to display an interest in the education of the women of Russia. She established, in 1764, an Educational Home for Girls of Noble Birth. From that beginning there was developed an educational work which is presented in an historical sketch of the Marie (so called from the Empress Marie Fedorovna, 1796–1828) educational and charitable institutions. Under the immediate patronage of their majesties, the Czar and Czarina, these include hospitals and benevolent institutions, schools for the deaf, dumb, and blind, public schools and insti-

tutes for girls. In twelve years the Russian people have contributed 10,000,000 rubles toward the support of the 472 institutions. In 1891 there were 24,417 persons in the educational establishments and 498,108 were aided by the Marie institutions which receive support from the Imperial family, from endowments previously founded, from a subsidy composed of 500,000 rubles accorded by the State treasury, from payments of pupils, and from public contributions.

In addition to the development of the Russian village industries, manual training is now taught in 19 teachers' seminaries, in 6 gymnasia, in 18 military colleges, in 150 town and village schools, and there are eleven temporary manual-training courses for teachers.

In Finland, a grand duchy of Russia, one still finds much of the sturdy independence of the Swedes, to which nation it belonged until 1809.

The Swedes and Finns formed a single nation for seven hundred years, and for a long period Swedish ideas predominated. About 85 per cent of the inhabitants of Finland are Finns and 14 per cent are Swedes, but the Swedes have been the dominating, cultured element for years; now there is greater equalization. In religious persuasion 98.05 per cent are Protestants.

Each nationality has its own schools where the instruction is given in either the Swedish or Finnish language, and there are also Swedish-Finnish schools in sections where the population is of too mixed a character to make it advisable to support separate schools.

The ambulatory school, as in Sweden, is a noteworthy feature. The teacher holds a school for a short period in one place and then moves on to another, much in the way that the circuit courts move about in the United States. In Finland in 1891 the ratio to the hundred of population was 7.47 in ambulatory schools and 2.41 in stationary schools of an elementary grade. Of the school population of 470,382 (7 to 16 years), only 21,523 children were not receiving any instruction at all.

Coeducation has been attempted in some schools of both elementary and secondary grades, and it is stated that, since 1883, five private coeducational institutions (four for the Swedes, one for the Finns) have been created, but the authorities do not as yet favor the giving of subsidies to coeducational institutions.

The benefits of education have been brought within the reach of the humblest peasant in Finland, and the comparative prosperity of the people is due in part to this. Impetus has been given to agriculture and horticulture, and to dairy farming, and prizes are offered to encourage the peasant class to develop the best methods of carrying on agricultural pursuits. Skilled persons go from place to place and instruct in carpentering, smithcraft, fish curing, etc. Temperance associations have been organized, and many pamphlets distributed which point out the dangers of alcoholic stimulants.

Competition in athletic sports is another feature authorized by the authorities; gymnastics is obligatory for both sexes in institutions of all grades, and school children are taught to swim, to skate, to ride bicycles, etc.

In my report for 1892-93 I included a chapter on child study (Vol. I, pp. 357-391). The subject is continued in the present report, in connection with a survey of recent movements pertaining to psychology in general (Chap. X).

Attention is called to new periodicals devoted to the subject as a whole or to some particular phase—i. e., *The Psychological Review*, *The Child Study Monthly*, etc.—and to the societies formed for promoting research in this province. Emphasis is placed upon the movements for correlating the results of different classes of investigation; the equipment of the leading universities for research in psycho-physics is given somewhat in detail with notices of the courses in child study maintained side by side with laboratory work. The principal results of the new psychology bearing directly upon school work are cited, and emphasis is placed upon their agreement with the conclusions reached by physiological investigations.

To the general survey of the movement several papers are appended, comprising discussions of the relations between the old and the new psychology, by Dr. Münsterberg, the bearing of the new psychology upon education by Dr. G. Stanley Hall, and other papers, discussing certain aspects of child study, the scope of psycho-physiology, and the grounds for the medical inspection of schools. The chapter concludes with a bibliography of the general subject covering the current year.

The National Educational Association has of late years undertaken several problems of great importance. A committee appointed at the Saratoga meeting in 1892 was charged with the examination of the existing courses of study and conditions of the secondary schools—that is to say, all institutions above the elementary schools which undertake to prepare students for college. This “committee of ten,” as it is commonly called, reported extensively on its work, and its report was completed and published in the spring of 1894.

Meanwhile, in the superintendents’ section of the National Educational Association, another committee was appointed to investigate in a like manner the work of elementary schools. This committee consisted of fifteen members. Three questions were submitted to it: (a) The organization of city school systems; (b) the correlation of studies in elementary education, and (c) the training of teachers. In order to facilitate the work the committee was divided into three sections, each consisting of five members, and each of these sections was intrusted with reporting on one of the three questions mentioned. Their reports were laid before the National Educational Association in February, 1895, and were vigorously discussed in the educational and other journals of this country. In order to preserve these documents I have caused them to be reprinted in this annual report.

One of the members of the committee, Superintendent James M. Greenwood, of Kansas City, Mo., dissents from the majority report in the opinion expressed regarding arithmetic. He has kindly furnished me a number of shorthand reports of arithmetic lessons taken in the schools under his charge. They are of sufficient interest to teachers to give them a place in this volume in the form of a supplement to the committee report. I add also a reprint of an article from the report of the St. Louis schools for the year 1872-73, entitled "Educational values." It contains a somewhat fuller discussion of some of the points relative to the educative value of the several studies in elementary and secondary schools, and in this way may be useful in explaining points that would seem to be obscure in the report of the subcommittee on the correlation of studies.

In the report of the committee of fifteen on the correlation of studies it was partly assumed that the studies of the school fall naturally into five coordinate groups, thus permitting a choice within each group as to the arrangement of its several topics, some finding a place early in the curriculum and others later. These five coordinate groups were, first, mathematics and physics; second, biology, including chiefly the plant and the animal; third, literature and art, including chiefly the study of literary works of art; fourth, grammar and the technical and scientific study of language, leading to such branches as logic and psychology; fifth, history and the study of sociological, political, and social institutions. Each one of these groups, it was assumed, should be represented in the curriculum at all times by some topic suited to the age and previous training of the pupil. This would be demanded by the two kinds of correlation defined in that report as (1) "symmetrical whole of studies in the world of human learning," and (2) "the psychological symmetry, or the whole mind."

The first period of school education is education for culture and education for the purpose of gaining command of the conventionalities of intelligence. These conventionalities are such arts as reading and writing and the use of figures, technicalities of maps, dictionaries, the art of drawing, and all of those semimechanical facilities which enable the child to get access to the intellectual conquests of the race. Later on in the school course, when the pupil passes out of his elementary studies, which partake more of the nature of practice than of theory, he comes in the secondary school and the college to the study of science and the technic necessary for its preservation and communication. All these things belong to the first stage of school instruction, the aim of which is culture. On the other hand, post-graduate work and the work of professional schools have not the aim of culture so much as the aim of fitting the person for a special vocation. In the post-graduate work of universities the demand is for original investigation in special fields. In the professional school the student masters the elements of a particular practice, learning its theory and its art.

It is in the first part of education—the schools for culture—that the five coordinate branches should be represented in a symmetrical manner. It is not to be thought that a course of university study, or that of a professional school should be symmetrical. The study of special fields of learning should come after a course of study for culture has been pursued in which the symmetrical whole of human learning and the symmetrical whole of the soul are considered. From the primary school, therefore, on through the academic course of the college, there should be symmetry, and five coordinate groups of studies represented at each part of the course, at least in each year, although perhaps not throughout each part of the year.

Commencing with the outlook of the child upon the world of nature, it has been found that arithmetic or mathematical study furnishes the first scientific key to the existence of bodies and their various motions. Mathematics in its pure form, as arithmetic, algebra, geometry, and the application of the analytical method, as well as mathematics applied to matter and force or statics and dynamics, furnishes the peculiar study that gives to us, whether as children or as men, the command of nature in this, its quantitative aspect. Mathematics furnishes the instrument, the tool of thought, which gives us power in this realm. But useful, nay, essential, as this mathematical or quantitative study is for this first aspect of nature, it is limited to it, and should not be applied to the next phase of nature, which is that of organic life; for we must not study in the growth of the plant simply the mechanical action of forces, but we must subordinate everything quantitative and mathematical to the principle of life or movement according to internal purpose or design. The principle of life, or biology, is no substitute, on the other hand, for the mathematical or quantitative study. The forces, heat, light, electricity, magnetism, galvanism, gravitation, inorganic matter—all these things are best studied from the mathematical point of view. The superstitious savage, however, imposes upon the inorganic world the principle of biology. He sees the personal effort of spirits in winds and storms, in fire and flowing streams. He substitutes for mathematics the principle of life, and looks in the movement of inanimate things for an indwelling soul. This is the animistic standpoint of human culture—the substitution of the biologic method of looking at the world for the quantitative or mathematical view.

The second group includes whatever is organic in nature—especially studies relating to the plant and the animal—the growth of material for food and clothing, and in a large measure for means of transportation and culture. This study of the organic phase of nature forms a great portion of the branch of study known as geography in the elementary school. Geography takes up also some of the topics that belong to the mathematical or quantitative view of nature, but it takes them up into a new combination with a view to show how they are related to organic life—to creating and supplying the needs of the

plant, animal, and man. There is, it is true, a "concentration" in this respect, that the mathematical or quantitative appears in geography as subordinated to the principle of organic life, for the quantitative—namely, inorganic matter and the forces of the solar system—appear as presuppositions of life. Life uses this as material out of which to organize its structures. The plant builds itself a structure of vegetable cells, transmuting what is inorganic into vegetable tissue; so, too, the animal builds over organic and inorganic substances, drawing from the air and water and from inorganic salts and acids, and by use of heat, light, and electricity converting vegetable tissue into animal tissue. The revelation of the life principle in plant and animal is not a mathematical one; it is not a mechanism moved by pressure from without or by attraction from within; it is not a mere displacement or an aggregation, or anything of that sort. In so far as it is organic, there is a formative principle which originates motion and modifies the inorganic materials and the mere dynamic forces of nature, giving them special form and direction, so as to build up vegetable or animal structures.

Kant defined organism as something within which every part is both means and end to all the other parts; all the other parts function in building up or developing each part, and each part in its turn is a means for the complete growth of every other part. These two phases of nature, the inorganic and the organic, exhaust the entire field. Hence a quantitative study conducted in pure and applied mathematics and biology (or the study of life in its manifestations) covers nature.

It has been asked whether drawing does not belong to a separate group in the course of study, and whether manual training is not a study coordinate with history and grammar. There are a number of branches of study, such as drawing, manual training, physical culture, and the like, which ought to be taught in every well-regulated school, but they will easily find a place within the five groups so far as their intellectual coefficients are concerned. Drawing, for instance, may belong to art or æsthetics on one side, but practically it is partly physical training with a view to skill in the hand and eye, and partly mathematical with a view to the production of geometric form. As a physical training its rationale is to be found in physiology, and hence it belongs in this respect to the second phase of the study of nature. As relating to the production of form it belongs to geometry and trigonometry and arithmetic, or the first phase of nature, the inorganic. As relating to art, or the æsthetic, it belongs to the third group of studies, within which literature is the main discipline.

But beside literature there are architecture, sculpture, painting, and music to be included in the æsthetic or art group of studies. Manual training, on the other hand, relates to the transformation of material such as wood or stone or other minerals into structures for human use,

namely, for architecture and for machines. It is clear enough that the rationale of all this is to be found in mathematics, hence manual training does not furnish a new principle different from that found in the first or the second study relating to nature.

The first study relating to human nature, as contrasted with mere organic and inorganic nature, is literature. Literature, as the fifth and highest of the fine arts, reveals human nature in its intrinsic form. It may be said in general that a literary work of art, a poem, whether lyric, dramatic, or epic, or a prose work of art, such as a novel or a drama, reveals human nature in its height and depth. It shows the growth of a feeling or sentiment first into a conviction and then into a deed; feelings, thoughts, and deeds are thus connected by a literary work of art in such a way as to explain a complete genesis of human action. Moreover, in a literary work of art there is a revelation of man as a member of social institutions.

The nucleus of the literary work of art is usually an attack of the individual upon some one of the social institutions of which he is a member, namely, a collision with the State, with civil society, or with the church. This collision furnishes an occasion for either a comic or a tragic solution. The nature of the individual and of his evolution of feeling into thoughts and deeds is shown vividly upon the background of institutions and social life. The work of art, whether music, painting, sculpture, or architecture, belongs to the same group as literature, and it is obvious that the method in which the work of art should be studied is not the method adopted as applicable to inorganic nature or to organic nature. The physiology of a plant or an animal, and the habits and modes of growth and peculiarities of action on the part of plants and animals, are best comprehended by a different method of study from that which should be employed in studying the work of art.

The work of art has a new principle, one that transcends life. It is the principle of responsible individuality and the principle of free subordination on the part of the individual to a social whole. It is in fact the exercise of original responsibility in opposition to a social whole, and the consequent retribution or other reaction that makes the content of the work of art. Further discussion is not necessary to show how absurd would be a purely mathematical treatment, or a biological treatment, of a work of art. Mathematics and biology must enter into a consideration of works of art only in a very subordinate degree. It would be equally absurd to attempt to apply the method in which a work of art should be studied to the study of an organic form or to the study of inorganic matter and forces.

The next coordinate branch includes grammar and language, and studies allied to it, such as logic and psychology. In the elementary school we have only grammar. Grammar treats of the structure of language; there is a mechanical side to it in orthography, and a technical side to it in etymology and syntax. But one can not call

grammar in any peculiar sense a formal study any more than he can apply the same epithet to one of the natural sciences. Natural science deals with the laws of material bodies and forces. Laws are forms of acting or of being, and yet by far the most important content of natural science is stated in the laws which it has discovered. So in the studies that relate to man the forms of human speech are very important. All grammatical studies require a twofold attitude of the mind, one toward the sign and one toward the signification; the shape of a letter or the form of a word or the peculiarity of a vocal utterance, these must be attended to, but they must be at once subordinated to the significance of the hidden thought which has become revealed by the sign or utterance.

The complexity of grammatical study is seen at once from this point of view. It is a double act of the will focusing the attention upon two different phases at once, namely, upon the natural phase and the spiritual phase, and the fusion of the two in one. Looking at this attitude of the mind, at this method of grammatical study, we see at once how different it all is from the attitude of the mind in the study of a work of art. In grammar we should not look to an evolution of a feeling into a thought or a deed; that would be entirely out of place. But we must give attention to the literal and prosaic word written or spoken, and consider it as an expression of a thought. We must note the structure of the intellect as revealed in this form. The word is a part of speech, having some one of the many functions which the word can fulfill in expressing a thought. Deeper down than grammatical structure is the logical structure, and this is a more fundamental revelation of the action of pure mind. Logic is in fact a part of psychology. Opening from one door toward another, we pass on our way from orthography, etymology, and syntax to logic and to psychology. All the way we use the same method; we use the sign or manifestation as a means of discovering the thought and the scientific classification of the thought.

Much has been said in the report of the committee of fifteen on the abuse of grammar in the study of literary works of art. The method of grammar leads to wonderful insight into the nature of reason itself. It is this insight which it gives us into our methods of thinking and of uttering our thoughts that furnishes the justification for grammar as one of the leading studies in the curriculum. Its use in teaching correct speaking and writing is always secondary to this higher use, which is to make conscious in man the structure of his thinking and expression. Important as it is, however, when it is substituted for the method of studying art it becomes an abuse. It is a poor way to study Shakespeare, Milton, Chaucer, and the Bible to grammatically parse them or analyze them, or to devote the time to their philological peculiarities, the history of the development of their language, or such matters. The proper method of studying the work of art is not a

substitute for that in grammar; it does not open the windows of the mind toward the logical, philological, or psychological structure of human thought and action.

There is a fifth coordinate group of studies, namely, that of history. History looks to the formation of the state as the chief of human institutions. The development of states, the collisions of individuals with the state, the collisions of the states with one another—these form the topic of history. The method of historic study is different from that in grammatical study and also from that in the study of literary and other works of art. Still more different is the method of history from those employed in the two groups of studies relating to nature, namely, the mathematical and biological methods. The history of literature and science has many examples of misapplications of method. For instance, Buckle, in his *History of Civilization*, has endeavored to apply the biological method and to some extent that of physics, apparently thinking that the methods of natural science, which are so good in their application to organic and inorganic nature, are likewise good for application within the realm of human nature. The reader of Buckle will remember, for instance, that the superstitious character of the Spanish people is explained by him as due to the frequency of earthquakes in the Peninsula. In selecting a physical cause for explaining a spiritual effect, Mr. Buckle passed over the most obvious explanation, which is this: The people of Spain were for many centuries on the marches or boundaries of Christian civilization and over against a Moslem civilization. Wherever there is a border land between two conflicting civilizations—a difference, either political or religious—there is a sharpening of the minds of the people so far as to produce the effect of opposition and bigotry. A continual effort to hold one's religious belief uncontaminated by the influence of a neighboring people leads to narrowness and to a superstitious adherence to forms. Narrowness and bigotry in religion are the foe to science and the friend to all manner of superstitions.

Mr. Buckle's work has interested people very much because it is an attempt to bring the methods of natural science into the study of human history. But it can not be regarded as anything more than an example of the attempt to substitute for the true method in history a method good only in another province.

In biology the whole animal is not fully revealed in each of his members, although, as stated in Kant's definition, each part is alike the means and the end for all the others. The higher animals and plants show the greatest difference between parts and whole. But in history it is the opposite; the lower types exhibit the greatest difference between the social whole and the individual citizen. The progress in history is toward freedom of the individual and local self-government. In the highest organisms of the state, therefore, there is a greater similarity between the individual and the national whole to which he

belongs. The individual takes a more active part in governing himself. The state becomes more and more an instrument of self-government in his hands. In the lowest states the gigantic personality of the social whole is all in all, and the individual personality is null, except in case of the supreme ruler and in the few associated with him.

The method of history keeps its gaze fixed upon the development of the social whole and the progress which it makes in realizing within its citizens the freedom of the whole. This method, it is evident enough, is different from those in literature and grammar; different also from the biological and the mathematical methods. In history we see how the little selves or individuals unite to form the big self or the nation. The analogies to this found in biology, namely, the combination of individual cells into the entire vegetable or animal organism, are all illusive so far as furnishing a clew to the process of human history.

From the above considerations it is possible to see what is the relation of this inquiry into educational values to the questions of child study and other topics in psychology, as well as to the Herbartian principle of interest. First and foremost, the teacher of the school has before him this question of the branches of learning to be selected. These must be discovered by looking at the grown man in civilization rather than at the child. The child has not yet developed his possibilities. The child first shows what he is truly and internally when he becomes a grown man. The child is the acorn. The acorn reveals what it is in the oak only after a thousand years. So man has revealed what he is, not in the cradle, but in the great world of human history and literature and science. He has written out his nature upon the blackboard of the universe.

In order to know what there is in the human will, we look into Plutarch's Parallel Lives. To see what man has done in philosophy, we read Plato, Aristotle, Leibnitz, and Hegel. For science we look to the Newtons and Darwins. We do not begin, therefore, with child study in our school education. But next after finding these great branches of human learning we consider the child, and how to bring him from his possibility to his reality. Then it becomes essential to study the child and his manner of evolution. We must discover which of its interests are already on the true road toward human greatness. We must likewise discover which ones conflict with the highest aims, and especially what interests there are that, although seemingly in conflict with the highest ends of man, are yet really tributary to human greatness, leading up to it by winding routes. All these are matters of child study, but they all presuppose the first knowledge, namely; the knowledge of the doings of mature humanity. There can be no step made in rational child study without keeping in view constantly these questions of the five coordinate groups of study.

Chapter XVI contains a sketch of the history of the American common school during the Colonial and Revolutionary period in the

United States. After a general introduction, in which the author discusses the educational theory of the American common school, he proceeds to trace, with some detail, the main outlines of the progress of the common-school idea from the time of its earliest appearance in New England. He recounts, also, the attempts at popular education in all of the other Colonies before the era of the Revolution, traces the increased interest in education of the various States as shown by the constitutions adopted during the war of the Revolution, and points out the awakening sense of nationality in matters of education which was displayed in the grants of magnificent areas of territory in what was then the new Northwest for purposes of education by the Congress of the Confederation.

In Chapter XVII, Rev. A. D. Mayo has given a sketch of the services of the late Robert Charles Winthrop to the Peabody education fund. In this paper also he traces briefly the career of George Peabody, showing how his fortune was accumulated, and unfolding the motives which led him to devote so large a share of his fortune to this particular form of education. Dr. Mayo traces also the career of Mr. Winthrop, and suggests the thought that his greatest service to the American people lies not in his political career, nor in his speeches and writings, but in the ability and fidelity which he displayed as president of the Peabody trustees in administering that great fund. The Peabody fund has been used to stimulate State and municipal action toward the organization and equipment of schools. It has also encouraged individual effort. To it more than to any other instrumentality is due the establishment on firm foundations of the common-school system in the South.

By an act of Congress approved August 30, 1890, additional funds were granted to the different States and Territories for the more complete endowment of their colleges of agriculture and the mechanic arts. According to the terms of the act, the expenditure of the sums so appropriated was to be restricted to certain specified purposes. The disposition of these funds made during the current year by the various beneficiary institutions is given in detail in a table in Chapter I of Part II (pp. 792-794).

The effect of forests upon climate, agriculture, and in regulating the flow of water in streams has long been acknowledged. Several European nations own extensive forests, which not only perform important economic functions, but also, under expert management, yield immediate and direct revenue. The national forests of France, of 2,200,000 acres, yield annually about \$5,000,000 net income. The planting, care, and preservation of forests are therefore subjects which these nations have recognized as demanding serious study. Mr. C. Wellman Parks, whom I appointed as special agent of this Bureau to the Antwerp Exposition, made an inquiry into the instruction given in several typical European forestry schools, the results of which are given in Chapter II of Part II (pp. 809-818). The account closes with a statement of the instruction

in forestry given at the different land-grant colleges in the United States.

"Geology in the colleges and universities of the United States" is the subject of Chapter III of Part II, contributed by Thomas Cramer Hopkins, A. M., S. M., fellow in geology, University of Chicago. The information compiled and the matter discussed in this chapter will prove especially valuable to teachers of geology and to prospective students in geology who are desirous of comparing the work done and the facilities offered in the different institutions in this branch of science. In preparing the chapter Mr. Hopkins used the replies from colleges and universities received in response to a circular sent out from this office asking for statistics on this subject. Besides having access to college catalogues, he gained much information from personal correspondence and interviews, and secured contributions from a number of well-known geologists in leading institutions. The matter is conveniently arranged and discussed by States, about 380 colleges and universities being mentioned, the chapter concluding with the statistical tables.

In 1887 a committee of distinguished chemists was appointed by the American Association for the Advancement of Science to consider the question of attaining uniformity in the spelling and pronunciation of chemical terms. Their report was adopted by the association at its meeting in 1891, was readopted in 1893, and is printed in full in Chapter IV of Part II of this report (pp. 873-876). The summary of rules which it contains has also been printed by this office in the form of a chart for distribution to high schools and colleges.

In Chapter V, Dr. C. M. Woodward, director of the St. Louis Manual Training School, has sketched the "Rise and progress of manual training." This phase of the general subject of industrial training has attracted a great deal of attention within the last few years, because of the ability of its advocates and the novelty of their claims in certain respects, but more especially because the decay of the system of apprenticeship has led people to look for some means of industrial education that could prepare youth for their future vocations, without at the same time depriving them of general culture in letters and the arts.

Professor Woodward is the founder of the first school in this country that aimed to give a manual training that is educative in its entire effect.

The university-extension movement has attained considerable proportions since first introduced into this country in 1890. In some cases the extension work has been dropped after a trial, these instances occurring mainly in sparsely settled regions, where the expenses of a circuit of lectures are too great. In general, however, the plan has been found to be a useful and practicable means of supplementing the common-school instruction of large numbers of persons who for one

reason or another have been debarred from the privileges of attending a college or university. Chapter VI of Part II (pp. 951-971) gives a detailed account of the status of university extension in the United States, the courses offered by various institutions, and reports of the work accomplished.

In Chapter VIII, Part II, education of the colored race is discussed at some length with particular reference to the industrial training of the negro. In the 160 schools there are 18,595 pupils in elementary grades, 13,375 in secondary, and 1,161 in higher or collegiate grades, making a total of 33,131 in these schools. Of the total number, 33,131, there were 8,050 students in industrial departments, 5,940 studying to be teachers, and 1,067 studying a learned profession. Chapter VIII reviews the financial history of several colored schools, showing how they were established and how still supported. The courses of study are somewhat critically examined and the courses in industrial training in several of the leading schools are discussed in detail.

A digest of the public school laws of the several States is given in Chapter IX of Part II (pp. 1063-1300). To facilitate examination and comparison of the legislative provisions and requirements of the different States upon any given point, a uniform mode of treatment has been employed.

In Chapter X of Part II (pp. 1301-1349) is given a compendium of sanitary legislation affecting schools in the United States, compiled by Miss Hannah B. Clark, of the University of Chicago. An attempt has been made to include in it all the laws affecting the health and safety of school children which appear upon the statute books of the different States, as well as city ordinances and regulations of school boards and boards of health. It would appear from Miss Clark's investigations that about one-third of the States require vaccination of school children; one-third take some slight precaution against fire; one-fourth have enactments designed to prevent the spread of contagious diseases; eight States require suitable sanitary arrangements; two prescribe proper ventilation, and one (Kentucky) the minimum amount of space to be allotted to each pupil. Kentucky is also the only State that requires school seats to be "suited to the age of the child."

Various questions relating to the status of education in several of the States are treated of in Chapter XI of Part II (pp. 1351-1449). Chapter XII (pp. 1451-1492) is taken up with the "Report on education in Alaska," by Rev. Sheldon Jackson.

Chapter XIII, Part II, presents "A preliminary list of American learned and educational societies." The compilation of this list was originally begun by Mr. Appleton Morgan, president of the New York Shakespeare Society, assisted by Mrs. L. L. Lawrence, of Plainfield, N. J., to both of whom my thanks are due. The work was continued and completed by Dr. Stephen B. Weeks, of this Bureau. An effort has been made to give the leading facts connected with the life history

of each society, its objects, the time and place of organization, the names of its founders, its present officers, and some notice of the extent and form of its publications. Such a list as that undertaken here has no direct predecessor in the United States, and has been particularly difficult for that reason; but it is believed that the list as printed will be of service, and will be useful in making future lists more complete.

In Chapter XIV of Part II, Dr. A. McDonald, specialist in education and crime, contributes a chapter on his criminological studies. He endeavors to prove that there can be no rational treatment of crime until causes are investigated. He estimates nine-tenths of crime to be due to bad social conditions. But he contends that crime is not a disease, in the medical sense, for statistics recently gathered by this Bureau show 82 per cent of criminals in good health. But the criminal should be imprisoned, first of all, because he is dangerous to the community.

Criminology is not yet a science, except by courtesy. It is an initiatory step in the direct study of human beings themselves and their relations to their surroundings. The students engaged in this field of research hold that the brain and the mind of the criminal naturally act and react upon each other, but can not decide which is primary in the present state of our knowledge.

There is little chance of lessening crime until children have the educative influence of a proper home or home-like institution.

In Chapter XV of Part II, Dr. McDonald makes report on the recent international congress held at Budapest for psychological, criminological, and demographical questions.

The best measures of combating or ameliorating criminal degeneracy are those of education (von Liszt). Whether responsible or not, the criminal must be placed where it is impossible for him to do injury, if he is dangerous to life or property (von Liszt).

At the Demographical Congress the Bertillon system of measurement was recommended not only for criminals but for all persons, so that every citizen could easily establish his identity beyond doubt.

The congress favored legislation that would gradually enact an eight-hour work day for all trades, and that would prohibit night work except where general public considerations require it. In regard to hygiene the congress resolved that: At all universities professorships should be constituted for the advancement of scientific researches in hygiene. In all elementary and special schools instruction in hygiene should be combined with and form the complement to gymnastics, games, and other exercises of the season. The teaching might be carried on in conjunction with the instruction in natural-science branches. There was a general agreement among those experts of different nations who examined young men for entering the military service that for the last few years there has been a gradual degeneration, physical and moral.

The extent to which industrial training in its various phases has been engrafted upon the work of education in America is brought out by the tables upon pages 2093 and 2114. These show that industrial training is of such prominence as to be almost the principal purpose of many of the schools for colored youth in the South and for Indians in the West; that it is an essential part of the training of reform schools, and in a less degree of that of schools for the so-called defective classes; and that the number of charitable concerns in which industrial training is the central idea is constantly growing. In institutions of these classes the instruction is avowedly intended to be of direct use to the pupil in earning his livelihood, and as such it amounts to trade-teaching pure and simple. But in other classes of schools represented in the tables the "trade idea" is scouted, and the statement is made that the principal, if not the sole, purpose of the manual training given is its educational value. In this category are to be included the distinctively "manual training schools" and most of the normal schools and city public schools. Other schools combine the two ideas and attempt to so adjust their instruction as to give it a direct practical use, claiming for it at the same time an important pedagogical value. In this category may be included most of the mechanical training given in the colleges and schools of technology, as well as in many schools of lower grade.

Notwithstanding these differences in purpose and the resulting variation of method, there is a strong similarity between them, and all must be included in any presentation of industrial training in America.

The showing is on the whole a creditable one. In the tables there are represented as giving industrial training the public schools of 94 cities, 19 normal schools, 49 institutions of collegiate grade, 65 schools for colored youth, 28 schools for Indians, 27 schools for the blind, 57 schools for the deaf, 20 schools for the feeble-minded, 55 reform schools, 17 manual training schools, 6 trade schools, and 19 charity schools.

Numerous bibliographies of educational literature have been compiled and printed. Some of these bibliographies are general in their character, covering the whole field of education, while others are restricted in their scope to some particular subject, such as "child study" or the "study of geography." They are to be found principally scattered through official reports, text-books, pamphlets, periodicals, etc. In Chapter XVI of Part II (pp. 1701-1722) an attempt has been made to compile a classified list of such recent educational bibliographies as were more readily accessible to the compiler or of the existence of which he obtained knowledge through any source. Details of size and classification or contents of the bibliographies, publisher, and price of the work they are contained in, are given when obtainable, as well as such other information, in the form of notes, as would enable a reader to determine whether any bibliography were such a one as he wanted, and put him in the way of getting it if he desired it.

Several useful bibliographies and reference lists, compiled by various hands, appear in the present report, to wit:

1. List of articles on Education in Great Britain that have appeared in the Commissioner's Report, p. 165.
 2. Similar list for Education in France, p. 187.
 3. Bibliography of German works on the History of Education, pp. 306-308.
 4. Bibliography of German works on the History and Methods of Arithmetic, pp. 314-323.
 5. List of works on Education in Italy, including articles in the Bureau's Reports, pp. 380-383.
 6. Material consulted for chapter on Education in Russia, p. 385.
 7. Material consulted for statement on Education in Finland, p. 413. Recent works on Education in Finland, p. 424.
 8. Bibliography of Psychology, 1893-94, pp. 465-467.
 9. Bibliography of Education of the Colored Race, pp. 1038-1047; Negroes in America, pp. 1048-1056; Works by Negro Authors, pp. 1056-1061.
 10. Bibliography of Congresses in Social Pathology, pp. 1697-1699.
- I include in a note¹ a list of the blank forms of inquiry sent out to obtain the material for the tables of this report.

I have the honor to be, very respectfully, your obedient servant,

W. T. HARRIS, *Commissioner.*

Hon. HOKE SMITH,
Secretary of the Interior.

¹ List of blank forms of inquiry sent out.

Schedules (annual).	Items.	Schedules tabulated.	Schedules mailed, about—
State systems	41	554	2,000
City systems	30	96	500
Manual training in city school systems	19	225	2,000
City and village systems	30	416	2,000
Manual and industrial training	42	3,904	15,000
Public secondary schools	42	1,082	7,500
Private secondary schools	74	478	1,100
Universities and colleges	28	166	400
Colleges for women	37	20	40
Schools of technology	8	20	70
University extension	25	63	400
Agricultural colleges	13	152	300
Medical schools	12	67	100
Law schools	15	147	200
Theological schools	12	35	50
Dental schools	12	35	50
Schools of pharmacy	11	66	150
Nurse training schools	26	398	1,500
Normal schools	28	518	1,000
Commercial schools	23	37	150
Institutions for the blind	80	88	250
Institutions for the deaf	62	27	150
Institutions for feeble-minded	32	82	250
Reform schools	16	160	500
Schools for the colored	8	400	800
Learned societies	8	375	1,000
Geology in colleges			

PART I.

- CHAP. I.—Whole Number of Pupils and Students (p. 3).**
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VII.—Education in Central Europe (p. 203).
VIII.—Public Instruction in Italy (p. 325).
IX.—Education in Russia (p. 385).
X.—The Psychological Revival (p. 425).
XI.—Report of the Committee of Fifteen. The Training of Teachers (p. 469).
XII.—The same. Correlation of Studies (p. 489).
XIII.—The same. Organization of City Systems (p. 543).
XIV.—Verbatim Reports of Recitations in Arithmetic, etc. (p. 557).
XV.—Educational Values of the Several Branches of Study (p. 617).
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XVIII.—List of State and City Superintendents and College Presidents (p. 773).

PART I.

CHAPTER I.

WHOLE NUMBER OF PUPILS AND STUDENTS.

The following table has been prepared to show, as near as can be ascertained, the total number of persons in the schools and colleges of the United States, public and private. The classification has been made according to the grade of the instruction received, irrespective of the character of the institutions which the pupils attend, the object being to ascertain the number of pupils of each grade. Thus all pupils in the "preparatory" departments of colleges have been classed as secondary, while all elementary pupils attending secondary schools have been given their proper classification.

It would appear that there were 15,530,268 persons in the United States who attended a school¹ or educational institution of some sort at some period during the school year 1893-94. Two persons out of every nine (22.88 per cent of the population) were at school.

As compared with the preceding year, there was an increase of 446,638, or 2.97 per cent.

It is to be understood that these figures are only approximate. The statistics of private elementary education are very imperfect, and their degree of accuracy varies from year to year. The large increase over the preceding year in the number of secondary and higher students is in part a result of their number having been more fully ascertained the present year. There have also been some changes of classification, by which the number of private normal students in particular appears to have been largely increased. On the whole, this table is not strictly comparable with corresponding tables published in previous reports of this office for ascertaining the increase in the number of pupils; it is believed, however, to be more accurate than any heretofore published, except as regarding private elementary pupils (column 3).

¹Excluding, in general, evening schools; music, elocution, art, industrial training, trades, and private business schools; schools for the defective, dependent, and delinquent classes, and Indian schools. These collectively enroll some 300,000 pupils.

Total number of pupils and students of all grades in both public and private schools, 1893-94.

NOTE.—The classification of States made use of in the following table is the same as that adopted by the United States census, and is as follows: *North Atlantic Division:* Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania. *South Atlantic Division:* Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, and Florida. *South Central Division:* Kentucky, Tennessee, Alabama, Mississippi, Louisiana, Texas, Arkansas, and Oklahoma. *North Central Division:* Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas. *Western Division:* Montana, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Idaho, Washington, Oregon, and California.

Division.	Pupils receiving elementary instruction ("primary" and "grammar" grades).		Pupils receiving secondary instruction ("high school" grade). <i>a</i>		Students receiving higher instruction.									
	Public.	Private (largely estimated).	Public. <i>b</i>	Private (in preparatory schools, academies, seminaries, etc.).	In universities and colleges. <i>c</i>			In schools of medicine, law, and theology. <i>e</i>			In normal schools. <i>g</i>			
					Public. <i>d</i>	Private.	Total.	Public. <i>f</i>	Private.	Total.	Public.	Private. <i>h</i>	Total.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	
The United States.....	13, 646, 703	1, 200, 155	302, 006	178, 352	20, 274	69, 039	89, 313	5, 616	42, 229	47, 845	37, 899	27, 995	65, 894	
North Atlantic Division.....	3, 199, 427	507, 017	98, 403	53, 104	2, 562	26, 046	28, 608	190	17, 716	17, 906	16, 424	1, 385	17, 809	
South Atlantic Division.....	1, 963, 599	64, 915	19, 494	26, 978	2, 575	10, 297	12, 872	712	5, 050	5, 762	3, 334	2, 728	6, 062	
South Central Division.....	2, 831, 633	162, 741	23, 220	35, 337	2, 195	11, 197	13, 392	668	4, 757	5, 425	3, 374	3, 421	6, 795	
North Central Division.....	5, 216, 614	417, 029	144, 783	53, 427	10, 695	18, 963	29, 658	3, 394	13, 902	17, 296	12, 056	19, 454	31, 510	
Western Division.....	635, 430	48, 453	16, 106	9, 506	2, 217	2, 536	4, 783	652	804	1, 456	2, 711	1, 007	3, 718	

^a Including pupils in preparatory or academic departments of higher institutions, public and private, and excluding elementary pupils, who are classed in columns 2 and 3. This is made up chiefly from the returns of individual high schools to the Bureau, and is considerably too small, as there are a great many secondary pupils outside the completely organized high schools whom there are no means of enumerating.

^b Including colleges for women, agricultural and mechanical (land grant) colleges, and scientific colleges. Students in law, theological, and medical departments are excluded, being tabulated in columns 9-11. Students in academic and preparatory departments are also excluded, being tabulated in columns 4 and 5.

^c Mainly State universities and agricultural and mechanical colleges.

^d Including veterinary and nurses' training schools.

^e Mainly in schools or departments of medicine and law attached to State universities.

^f Nonprofessional pupils in normal schools are included in columns 4 and 5.

^g Private normal schools are, with few exceptions, scarcely superior to the ordinary secondary schools.

Total number of pupils and students of all grades in both public and private schools, 1893-94—Continued.

Division.	Summary of higher instruction.		Summary of pupils by grade.			Summary—public and private.		Grand total.
	Public.	Private.	Elementary.	Secondary.	Higher.	Public.	Private.	
1	15	16	17	18	19	20	21	22
The United States	63,789	139,293	14,846,858	480,358	203,052	14,012,498	1,517,770	15,530,268
North Atlantic Division.....	19,176	45,147	3,708,444	151,507	64,323	3,317,006	605,268	3,922,274
South Atlantic Division.....	6,621	18,075	2,028,514	68,472	24,096	1,899,714	109,908	2,009,622
South Central Division.....	6,237	19,375	2,794,374	58,557	23,612	2,661,090	217,453	2,878,543
North Central Division.....	26,145	53,319	5,633,643	198,210	78,464	5,387,942	522,775	5,910,717
Western Division	6,610	4,347	663,883	25,612	9,957	657,146	62,306	719,452

CHAPTER II.

CONSOLIDATED STATISTICS OF STATE AND CITY COMMON SCHOOL SYSTEMS.

NOTE.—The common schools as here understood include public day schools of elementary and secondary grades; i. e., public primary, grammar, and high schools. Classification by race is given elsewhere in this report.

I.—STATE SCHOOL SYSTEMS.

The following tables contain the common school statistics of the various States and Territories for 1893–94, with the exception of some half dozen States, for which the figures of 1892–93 are given. The totals for the United States are therefore subject to correction.

Tables 1 and 2 contain various details regarding different classes of the population and their relations to each other, which it is important to have in mind in considering the educational status of the several States. The total population, the number of persons from 5 to 18 years of age, and the adult male population have been carefully estimated for the epoch 1894, using wherever possible as a basis the increase of the State school population as determined by the annual school censuses.

TABLE 1.—*The total population, the school population, and the adult male population.*

State or Territory.	Estimated total popu- lation in 1894.	The school population.			Percent- age of males.	Estimated number of males 21 years of age and over in 1894.
		Estimated number of children 5 to 18 years of age in 1894.				
		Males.	Females.	Total.		
1	2	3	4	5	6	7
United States.....	67,891,380	10,138,302	9,948,121	20,086,423	50.47	18,426,220
North Atlantic Division.....	18,617,700	2,372,620	2,357,452	4,730,072	50.16	5,405,700
South Atlantic Division.....	9,431,900	1,618,180	1,591,220	3,209,400	50.42	2,147,000
South Central Division.....	12,054,500	2,120,580	2,064,760	4,185,340	50.66	2,774,980
North Central Division.....	24,135,000	3,577,340	3,497,660	7,075,060	50.57	6,702,000
Western Division.....	3,651,280	449,582	437,029	886,611	50.71	1,396,540
North Atlantic Division:						
Maine.....	645,300	80,220	78,580	158,800	50.53	196,400
New Hampshire.....	389,000	43,400	43,300	86,700	50.06	122,100
Vermont.....	332,500	42,260	39,710	81,970	51.55	101,700
Massachusetts.....	2,422,000	275,900	277,900	553,800	49.83	719,300
Rhode Island.....	389,800	47,300	47,730	95,030	49.78	112,800
Connecticut.....	794,100	93,910	92,990	186,900	50.24	238,500
New York.....	6,310,000	774,500	775,500	1,550,000	49.95	1,862,000
New Jersey (1893).....	1,628,000	a 212,339	a 211,542	a 423,872	50.09	465,900
Pennsylvania.....	5,708,000	802,800	790,200	1,593,000	50.38	1,587,000

a State school census.

TABLE 1.—*The total population, the school population, and the adult male population—Continued.*

State or Territory.	Estimated total population in 1894.	The school population.				Estimated number of males 21 years of age and over in 1894.
		Estimated number of children 5 to 18 years of age in 1894.			Percent- age of males.	
		Males.	Females.	Total.		
1	2	3	4	5	6	7
South Atlantic Division:						
Delaware (1892).....	173,200	24,750	24,080	48,830	50.69	48,900
Maryland.....	1,089,000	159,900	158,900	318,800	50.18	282,800
District of Columbia.....	286,400	32,840	34,790	67,630	48.55	74,600
Virginia.....	1,746,000	300,600	295,700	596,300	50.41	399,300
West Virginia.....	809,900	137,700	134,600	272,300	50.56	192,600
North Carolina.....	1,719,000	307,130	300,610	607,740	50.54	364,100
South Carolina.....	1,220,000	228,700	224,400	453,100	50.48	249,700
Georgia.....	1,954,000	350,800	342,900	693,700	50.57	423,300
Florida.....	454,400	75,780	75,240	151,000	50.17	111,700
South Central Division:						
Kentucky.....	1,930,000	319,450	312,780	632,230	50.53	468,100
Tennessee (1893).....	1,806,000	314,500	303,600	618,100	50.89	411,200
Alabama.....	1,703,000	308,200	299,800	608,000	50.69	365,600
Mississippi.....	1,396,000	260,100	252,200	512,300	50.78	293,500
Louisiana (1893).....	1,178,000	201,500	199,700	401,200	50.22	264,000
Texas.....	2,582,000	458,700	447,600	906,300	50.61	619,100
Arkansas.....	1,214,300	219,800	213,300	433,100	50.75	277,400
Oklahoma.....	245,500	38,330	35,780	74,110	51.73	76,080
North Central Division:						
Ohio.....	3,748,000	537,900	525,600	1,063,500	50.57	1,037,500
Indiana (1893).....	2,253,000	335,900	329,800	665,600	50.45	611,600
Illinois.....	4,331,000	616,200	607,800	1,224,000	50.34	1,214,000
Michigan.....	2,227,000	311,850	306,650	618,500	50.42	656,800
Wisconsin.....	1,893,000	285,000	280,800	565,800	50.37	518,200
Minnesota.....	1,555,000	227,200	222,800	450,000	50.48	449,200
Iowa.....	2,018,000	309,300	299,690	608,900	50.79	549,300
Missouri.....	2,895,000	454,400	446,300	900,700	50.45	762,700
North Dakota.....	268,700	37,910	35,450	73,360	51.67	82,300
South Dakota.....	401,300	60,130	57,370	117,500	51.16	118,100
Nebraska.....	1,156,000	177,860	170,310	348,170	51.06	329,200
Kansas.....	1,389,000	223,790	215,180	438,970	50.98	373,100
Western Division:						
Montana.....	194,700	17,760	17,400	35,160	50.52	96,360
Wyoming.....	88,750	9,804	9,129	18,933	51.78	89,540
Colorado.....	495,203	55,100	53,900	109,000	50.56	108,100
New Mexico.....	196,400	28,150	26,970	55,120	51.07	57,480
Arizona (1893).....	70,120	9,775	9,575	19,350	50.52	30,250
Utah.....	243,000	39,890	38,960	78,850	50.59	63,660
Nevada.....	43,010	4,773	4,635	9,408	50.73	19,690
Idaho.....	116,700	16,250	15,340	31,590	51.43	43,560
Washington.....	458,200	53,240	50,760	104,000	51.20	192,700
Oregon.....	390,200	53,140	52,060	105,200	50.52	139,000
California.....	1,349,000	161,700	158,300	320,000	50.54	516,200

TABLE 2.—*Relation of the school population to the total population and to the adult male population; proportion of the white school population of foreign birth or extraction; percentage of foreign born of total population.*

State or Territory.	Number of children 5 to 18 years of age to every 100 persons of the total population.			Number of adult males to every 100 children 5 to 18 years of age in 1890.	Percentage of white children 5 to 18 years of age that were of foreign birth or parentage in 1890.	Percentage of foreign born of total population.		
	1870.	1880.	1890.			1870.	1880.	1890.
1	2	3	4	5	6	7	8	9
United States.....	31.27	30.04	29.61	91.4	Per ct. 33.5	Per ct. 14.44	Per ct. 13.32	Per ct. 14.77
North Atlantic Division.....	28.30	26.87	25.39	114.4	45.8	20.49	19.40	22.34
South Atlantic Division.....	33.02	32.24	34.04	66.8	6.6	2.85	2.29	2.35
South Central Division.....	33.93	33.13	34.76	65.9	8.6	3.62	3.68	2.93
North Central Division.....	32.40	30.63	29.33	94.6	41.5	17.97	16.80	18.16
Western Division.....	25.57	25.13	24.33	156.7	44.7	31.64	28.29	25.46
North Atlantic Division:								
Maine.....	28.01	25.71	24.60	123.7	25.0	7.80	9.07	11.94
New Hampshire.....	24.75	22.80	22.29	140.8	38.4	9.30	13.34	19.21
Vermont.....	27.18	25.96	24.65	124.1	33.4	14.27	12.33	13.26
Massachusetts.....	25.51	23.98	22.87	129.9	60.5	24.24	24.87	29.35
Rhode Island.....	25.66	24.64	24.38	118.7	62.4	25.49	26.76	30.77
Connecticut.....	25.88	24.97	23.54	127.6	54.6	21.14	20.88	24.60
New York.....	28.09	26.32	24.57	120.1	54.8	25.97	23.83	26.19
New Jersey.....	29.01	27.98	26.04	109.9	48.3	20.85	19.60	22.77
Pennsylvania.....	30.55	29.43	27.92	99.6	32.3	15.48	13.73	16.08
South Atlantic Division:								
Delaware.....	31.84	29.11	28.19	100.1	17.3	7.31	6.46	7.81
Maryland.....	31.30	29.89	29.28	88.7	24.4	10.68	8.86	9.05
District of Columbia.....	27.01	26.87	25.38	110.3	26.3	12.84	9.64	8.15
Virginia.....	32.39	32.43	34.16	67.0	2.8	1.12	.97	1.11
West Virginia.....	34.13	33.37	33.62	70.7	5.9	3.87	2.95	2.48
North Carolina.....	33.60	32.30	35.35	59.9	.7	.28	.27	.23
South Carolina.....	33.15	33.21	37.14	55.1	2.3	1.14	.77	.54
Georgia.....	34.42	33.17	35.50	61.0	2.1	.94	.69	.66
Florida.....	34.03	32.82	33.23	74.0	11.5	2.65	3.68	5.86
South Central Division:								
Kentucky.....	34.41	33.14	32.76	74.0	8.7	4.80	3.61	3.19
Tennessee.....	34.13	33.44	34.22	66.5	2.9	1.53	1.08	1.13
Alabama.....	34.40	33.87	35.70	60.1	3.2	1.00	.77	.98
Mississippi.....	33.70	34.12	36.00	57.3	8.1	1.35	.81	.62
Louisiana.....	31.11	31.93	34.04	65.8	17.8	8.53	5.76	4.45
Texas.....	34.80	32.60	35.10	68.3	16.9	7.62	7.20	6.84
Arkansas.....	34.16	33.15	35.68	64.0	3.5	1.04	1.29	1.26
Oklahoma.....			30.18	102.7	9.6			4.43
North Central Division:								
Ohio.....	31.74	29.75	28.37	97.6	30.4	13.98	12.35	12.51
Indiana.....	33.75	31.37	29.54	91.9	17.8	8.42	7.29	6.67
Illinois.....	32.24	30.66	28.26	99.2	47.0	20.28	18.96	22.01
Michigan.....	30.23	28.87	27.77	108.2	56.1	22.03	23.73	25.97
Wisconsin.....	33.57	30.85	29.88	91.6	72.4	34.56	30.82	30.78
Minnesota.....	32.45	30.43	28.93	99.8	76.4	36.55	34.28	35.90
Iowa.....	33.08	31.40	30.17	90.2	42.6	17.14	16.11	16.95
Missouri.....	33.57	32.35	31.11	84.7	22.5	12.91	9.76	8.77
North Dakota.....	23.74	24.34	27.30	112.2	30.3	33.95	38.32	44.58
South Dakota.....	28.07	29.88	29.29	100.5	61.2			27.69
Nebraska.....	28.07	29.88	30.12	94.5	42.1	25.00	21.53	19.13
Kansas.....	29.83	31.73	31.59	85.0	26.4	13.28	11.05	10.36
Western Division:								
Montana.....	10.20	17.10	18.06	274.0	49.4	38.74	29.42	32.61
Wyoming.....	9.59	18.06	21.33	208.8	47.2	38.53	28.14	24.57
Colorado.....	22.47	18.72	22	181.8	36.3	16.55	20.48	20.38
New Mexico.....	31.90	29.85	28.07	104.3	13.2	6.12	6.73	7.33
Arizona.....	16.78	19.59	25.42	156.4	57.1	60.15	39.60	31.52
Utah.....	35.05	33.39	32.45	80.7	66.6	35.38	30.54	25.52
Nevada.....	12.58	18.22	21.67	208.3	60.8	44.25	41.20	32.14
Idaho.....	11.90	22.98	27.07	137.9	41.1	52.57	30.59	20.69
Washington.....	26.96	27.19	22.69	185.3	39.3	20.87	21.04	25.76
Oregon.....	32.84	28.63	26.96	132.1	27.9	12.70	17.45	18.27
California.....	24.48	25.03	23.72	161.3	51.8	37.45	33.87	30.82

ENROLLMENT.

The common school enrollment for 1893-94, as given in Tables 3 and 4 following, is less than that found by adding together columns 2 and 4 of the table of Chapter I (p. 4), in that it does not embrace secondary pupils in public universities and colleges.

The whole number of pupils enrolled in the common schools is found to be 13,935,977, or nearly twice the number in 1870-71. The increase over the number reported the preceding year, 425,258, is unusually large, and would seem to indicate that periods of "hard times" have a favorable effect upon school attendance, numbers of children, perhaps from lack of remunerative labor, being diverted from the factory or workshop to the school.

The percentage of the school population (5 to 18 years of age) enrolled in the schools is 69.39, as against 69.10 in 1892-93.

TABLE 3.—*Number of pupils enrolled in the common schools at various periods, and the relation of the enrollment to the school population.*

State or Territory.	Number of different pupils enrolled during the school year, excluding duplicates.				Per cent of school population (5 to 18 years) enrolled.			
	1870-71.	1879-80.	1889-90.	1893-94.	1870-71.	1879-80.	1889-90.	1893-94.
1	2	3	4	5	6	7	8	9
United States.....	7,561,582	9,867,505	12,722,581	13,935,977	61.45	65.50	68.61	69.39
North Atlantic Division.	2,743,344	2,930,345	3,112,622	3,293,714	77.95	75.17	70.45	69.63
South Atlantic Division.	603,019	1,242,811	1,785,486	1,981,336	30.51	50.74	59.23	61.74
South Central Division.	767,839	1,371,975	2,283,579	2,652,795	34.17	46.43	60.14	63.37
North Central Division.	3,300,680	4,033,828	5,015,217	5,357,952	76.87	75.84	76.46	75.73
Western Division.	140,120	288,546	615,677	650,180	54.77	64.96	70.01	73.33
North Atlantic Division:								
Maine.....	a152,600	149,827	139,676	135,815	87.35	89.80	85.88	85.52
New Hampshire.....	71,957	64,341	59,813	62,437	91.31	81.32	71.28	72.03
Vermont.....	665,384	75,238	c65,908	65,548	.....	87.21	.....	79.97
Massachusetts.....	273,681	306,777	371,492	400,609	72.34	71.76	72.56	72.35
Rhode Island.....	a34,000	40,604	52,774	55,671	59.24	59.59	62.65	58.59
Connecticut.....	113,588	119,604	126,505	136,049	80.53	76.97	72.02	72.80
New York.....	1,028,110	1,031,593	1,042,160	1,124,998	82.98	77.10	70.71	72.57
New Jersey.....	169,430	204,961	234,072	d249,588	63.20	64.77	62.21	d58.89
Pennsylvania.....	834,614	937,310	1,020,522	1,062,999	76.35	74.37	69.53	66.71
South Atlantic Division:								
Delaware.....	20,058	27,823	31,434	f33,174	50.04	65.20	66.19	f67.98
Maryland.....	115,683	162,431	184,251	204,846	46.70	58.13	60.37	64.27
District of Columbia.	15,157	26,439	36,906	40,678	41.60	55.40	63.10	66.16
Virginia.....	131,088	220,736	342,269	352,710	32.84	45.00	60.51	59.14
West Virginia.....	70,990	142,850	193,064	218,815	49.47	69.21	75.27	80.33
North Carolina.....	a115,000	252,612	322,533	370,890	31.23	55.87	56.39	61.04
South Carolina.....	66,056	134,072	201,260	226,766	27.28	40.56	47.08	50.04
Georgia.....	49,578	236,533	381,297	436,682	11.89	46.24	58.45	62.97
Florida.....	14,000	39,315	92,472	90,775	31.21	44.16	71.10	64.10
South Central Division:								
Kentucky.....	g178,457	g276,000	399,660	467,451	.....	.....	65.64	73.93
Tennessee.....	a140,000	300,217	447,850	d463,461	32.00	58.21	74.05	d75.00
Alabama.....	141,312	179,490	301,615	306,014	40.36	42.60	55.83	50.32
Mississippi.....	117,000	236,654	334,158	345,584	40.60	61.29	70.62	67.47
Louisiana.....	57,639	77,642	120,253	d155,470	24.78	25.87	31.58	d38.65
Texas.....	63,504	a220,000	406,872	598,608	21.00	42.40	59.50	66.04
Arkansas.....	69,927	81,972	222,071	285,159	40.29	30.81	55.41	65.83
Oklahoma.....	.....	.....	.....	31,048	.....	.....	.....	41.90

a Estimated.

b Includes only pupils of school age (5 to 20).

c Same (5 to 18).

d In 1892-93.

e Enrollment of Philadelphia estimated.

f In 1891-92.

g Highest number enrolled.

TABLE 3.—*Number of pupils enrolled in the common schools at various periods, and the relation of the enrollment to the school population.*—Continued.

State or Territory.	Number of different pupils enrolled during the school year, excluding duplicates.				Per cent of school population (5 to 18 years) enrolled.			
	1870-71.	1879-80.	1889-90.	1893-94.	1870-71.	1879-80.	1889-90.	1893-94.
I	2	3	4	5	6	7	8	9
North Central Division:								
Ohio.....	719,372	729,499	797,439	809,780	84.04	76.09	76.54	76.15
Indiana.....	450,057	511,283	512,955	^a 517,459	78.64	82.39	79.21	^a 77.75
Illinois.....	672,787	704,041	778,319	855,938	81.01	74.61	71.97	69.93
Michigan.....	292,466	362,556	427,062	468,979	79.66	78.08	73.45	75.84
Wisconsin.....	265,285	289,457	351,723	385,620	73.93	73.78	69.77	68.17
Minnesota.....	113,963	180,248	280,900	337,861	75.92	75.87	74.59	75.08
Iowa.....	341,988	426,057	493,267	522,731	84.44	83.52	85.51	85.84
Missouri.....	330,070	482,968	620,314	657,505	56.03	68.85	74.43	73.00
North Dakota.....	} 61,690	13,718	35,543	47,361	} 39.26	41.68	} 81.26	64.55
South Dakota.....			78,043	87,826				
Nebraska.....	23,265	92,548	240,300	273,052	58.79	68.48	75.25	78.43
Kansas.....	89,777	231,434	399,322	393,840	74.22	73.23	88.56	89.72
Western Division:								
Montana.....	1,067	4,270	16,980	25,720	70.24	63.77	71.14	73.12
Wyoming.....	^b 450	2,907	7,052	10,310	45.34	77.44	54.46	54.46
Colorado.....	4,387	22,119	65,490	84,448	42.28	60.82	72.20	77.50
New Mexico.....	^b 1,320	4,755	18,215	21,471	4.42	12.32	42.25	38.95
Arizona.....	0	4,212	7,969	^a 11,320	.....	53.16	52.72	^a 58.50
Utah.....	16,992	24,325	37,279	57,908	53.36	50.61	55.26	73.45
Nevada.....	8,166	9,045	7,387	6,827	53.97	79.73	73.80	72.57
Idaho.....	906	5,834	14,311	24,266	46.06	77.85	62.66	76.80
Washington.....	^b 5,900	14,798	55,964	86,720	69.00	72.36	70.58	83.49
Oregon.....	21,000	37,532	63,254	77,941	67.73	75.02	74.78	74.08
California.....	91,322	158,705	221,756	243,249	63.63	73.37	77.38	76.02

^a In 1892-93.^b Estimated.

TABLE 4.—The school enrollment of 1893-94 classified by sex; per cent of the male and female school population enrolled.

State or Territory.	Whole number of different pupils enrolled.			Per cent of school population (5 to 18 years) enrolled.		
	Males.	Females.	Total.	Male.	Female.	Male and female.
1	2	3	4	5	6	7
United States.....			13,935,977			69.39
North Atlantic Division.....			8,293,714			69.63
South Atlantic Division.....			1,981,336			61.74
South Central Division.....			2,652,795			63.37
North Central Division.....			5,357,952			75.73
Western Division.....			650,180			73.33
North Atlantic Division:						
Maine.....			135,815			85.52
New Hampshire.....	32,003	30,434	62,437	73.72	70.29	72.08
Vermont.....	33,664	31,884	65,548	79.65	80.80	79.97
Massachusetts.....			400,600			72.35
Rhode Island.....	28,118	27,653	55,671	59.44	57.71	58.59
Connecticut.....			136,049			72.80
New York.....			1,124,998			72.57
New Jersey (1892-93).....	125,970	123,618	249,588	59.33	58.44	58.89
Pennsylvania.....	539,244	523,755	1,062,999	67.17	66.28	66.71
South Atlantic Division:						
Delaware (1891-92).....			33,174			67.88
Maryland.....			204,846			64.27
District of Columbia.....	19,038	21,640	40,678	57.97	62.20	60.16
Virginia.....	178,773	173,937	352,710	59.47	58.83	59.14
West Virginia.....	115,400	103,415	218,815	83.82	76.84	80.33
North Carolina.....	188,333	182,557	370,890	61.33	60.73	61.04
South Carolina.....	113,081	113,685	226,766	49.44	50.66	50.04
Georgia.....	218,046	218,636	436,682	62.17	63.76	62.97
Florida.....	48,251	48,524	96,775	63.70	64.40	64.10
South Central Division:						
Kentucky.....	240,540	226,911	467,451	75.30	72.55	73.93
Tennessee.....	238,280	225,181	463,461	75.75	74.18	75.00
Tennessee (1892-93).....			306,014			50.32
Alabama.....	172,960	172,624	345,584	66.50	68.45	67.47
Mississippi.....	78,219	77,251	155,470	38.83	38.68	38.75
Louisiana (1892-93).....	301,856	296,752	598,608	65.81	66.30	66.04
Texas.....	147,511	137,648	285,159	67.11	64.52	65.83
Arkansas.....	15,902	15,146	31,048	41.49	42.33	41.90
Oklahoma.....						
North Central Division:						
Ohio.....	416,448	393,332	809,780	77.42	74.83	76.15
Indiana (1892-93).....	285,093	252,966	537,459	78.96	78.52	77.75
Illinois.....	434,103	421,835	855,938	70.45	69.39	69.93
Michigan.....	226,389	232,590	458,979	75.80	75.87	75.84
Wisconsin.....	196,866	188,754	385,620	69.09	67.22	68.17
Minnesota.....			337,861			75.06
Iowa.....			522,731			85.84
Missouri.....	833,349	824,156	1,657,505	73.35	72.63	73.00
North Dakota.....	25,065	22,296	47,361	66.13	62.89	64.55
South Dakota.....	46,349	41,477	87,826	77.07	72.20	74.73
Nebraska.....	140,547	132,506	273,052	79.02	77.80	78.43
Kansas.....	202,549	191,291	393,840	90.54	88.90	89.72
Western Division:						
Montana.....			25,720			73.13
Wyoming.....	5,339	4,971	10,310	54.45	54.46	54.46
Colorado.....			84,448			77.50
New Mexico.....	12,945	8,526	21,471	45.98	31.61	38.95
Arizona (1892-93).....			11,320			58.50
Utah.....	29,578	28,330	57,908	74.15	72.72	73.45
Nevada.....	3,493	3,334	6,827	73.18	71.83	72.57
Idaho.....	12,568	11,098	24,266	77.34	76.26	76.80
Washington.....	44,314	42,406	86,720	83.24	83.56	83.40
Oregon.....	39,225	38,716	77,941	73.82	74.87	74.08
California.....	123,604	119,045	242,249	76.42	75.58	76.02

TABLE 5.—*The average daily attendance at various periods, and its present relation to the school enrollment.*

State or Territory.	Average number of pupils in attendance each day.				Per cent of enrollment in 1893-94.
	1870-71.	1879-80.	1889-90.	1893-94.	
1	2	3	4	5	6
United States	4,545,317	6,144,143	8,153,635	9,187,505	65.92
North Atlantic Division.....	1,627,208	1,824,487	2,036,450	2,233,288	67.80
South Atlantic Division.....	368,111	776,798	1,126,683	1,231,432	62.14
South Central Division.....	535,632	902,767	1,467,646	1,669,672	64.17
North Central Division.....	1,911,720	2,451,167	3,188,732	3,589,112	66.82
Western Division	102,646	188,924	334,112	443,001	68.14
North Atlantic Division:					
Maine.....	100,392	103,115	98,364	90,115	66.36
New Hampshire.....	48,150	49,966	41,526	42,030	67.30
Vermont.....	a 44,100	48,606	45,887	40,120	61.20
Massachusetts.....	201,750	233,127	273,910	299,069	74.67
Rhode Island.....	22,485	27,217	33,905	38,587	66.31
Connecticut.....	62,683	73,546	83,656	91,471	67.23
New York.....	493,648	573,069	642,984	721,063	64.07
New Jersey.....	86,812	115,194	133,296	b 151,273	b 60.60
Pennsylvania.....	567,188	601,027	682,941	759,560	71.45
South Atlantic Division:					
Delaware.....	a 12,700	17,439	19,040	a 22,693	a 68.40
Maryland.....	56,435	85,778	102,351	116,542	56.89
District of Columbia.....	10,261	20,637	28,184	31,348	77.05
Virginia.....	77,402	128,404	168,290	203,874	57.80
West Virginia.....	51,336	91,604	121,700	135,381	61.87
North Carolina.....	a 73,000	170,100	203,100	240,301	62.09
South Carolina.....	a 44,700	a 90,900	147,799	165,115	72.82
Georgia.....	31,377	145,190	240,791	262,040	69.00
Florida.....	a 10,900	27,046	64,819	64,138	66.27
South Central Division:					
Kentucky.....	120,866	178,000	225,739	268,464	57.44
Tennessee.....	a 89,000	208,528	323,548	b 330,078	b 71.40
Alabama.....	107,666	117,978	182,467	a 185,100	a 60.49
Mississippi.....	90,000	156,761	207,704	206,247	59.67
Louisiana.....	a 40,500	a 54,800	87,536	b 107,870	b 66.07
Texas.....	a 41,000	a 132,000	a 291,941	418,069	66.85
Arkansas.....	a 46,600	a 54,700	a 148,714	166,544	58.41
Oklahoma.....				16,900	54.42
North Central Division:					
Ohio.....	432,452	476,270	549,269	583,599	72.07
Indiana.....	295,071	321,659	342,275	b 371,298	b 71.75
Illinois.....	341,686	431,638	538,310	565,107	66.01
Michigan.....	a 193,000	a 240,000	a 282,000	286,077	61.00
Wisconsin.....	a 132,000	a 156,000	200,457	a 253,352	a 65.69
Minnesota.....	50,694	a 78,400	127,025	209,307	61.94
Iowa.....	211,562	259,836	306,309	331,408	62.39
Missouri.....	187,024	a 281,000	384,627	469,846	71.47
North Dakota.....	a 1,040	8,530	20,694	32,305	68.22
South Dakota.....			48,327	a 54,400	61.94
Nebraska.....	a 14,300	60,156	146,139	171,198	62.69
Kansas.....	52,891	137,669	243,300	252,215	64.03
Western Division:					
Montana.....	a 1,100	a 3,000	10,596	16,423	63.87
Wyoming.....	a 250	1,920	4,700	a 6,508	a 64.00
Colorado.....	2,611	12,618	38,715	53,127	62.90
New Mexico.....	a 880	3,150	a 13,000	16,987	79.12
Arizona.....		2,847	4,702	b 6,921	b 61.15
Utah.....	12,819	17,178	20,967	39,821	68.75
Nevada.....	a 1,800	5,401	5,064	5,047	73.93
Idaho.....	a 600	3,863	a 9,500	16,030	66.16
Washington.....	a 3,300	10,546	36,946	58,399	67.34
Oregon.....	a 15,000	27,435	43,333	58,984	75.70
California.....	64,285	100,966	146,580	164,664	67.70

a Estimated.

b In 1892-93.

c In 1891-92.

TABLE 6.—(1) *Average length of school term.* (2) *Aggregate number of days' schooling given to all pupils; the same compared with the school population and the school enrollment.*

State or Territory.	Average length of school term in days.				Aggregate number of days' schooling given.	Average number of days' schooling given for each child 5 to 18 years of age in 1893-94.	Average number of days attended by each pupil enrolled in 1893-94.
	1870-71	1879-80	1889-90	1893-94			
1	2	3	4	5	6	7	8
United States	132.1	130.3	134.7	139.0	1,277,037,178	63.6	91.6
North Atlantic Division.....	152.0	159.2	166.6	172.5	385,083,178	81.4	116.8
South Atlantic Division.....	97.4	92.4	98.9	108.2	133,177,986	41.5	67.2
South Central Division.....	91.6	79.2	88.2	99.9	169,816,147	40.6	64.0
North Central Division.....	133.9	139.8	148.0	147.4	527,720,008	74.6	98.5
Western Division.....	119.2	129.2	135.0	138.3	61,239,859	69.1	94.2
North Atlantic Division:							
Maine.....	98.0	109.0	112.0	123.0	11,084,145	69.8	81.6
New Hampshire.....	70.0	105.3	117.7	124.75	5,243,243	63.1	87.6
Vermont.....	115.6	125.5	136.0	155.45	6,430,261	78.4	98.1
Massachusetts.....	169.0	177.0	177.0	175.0	52,337,075	94.5	130.6
Rhode Island.....	170.0	184.0	188.0	189.0	7,455,340	78.4	123.9
Connecticut.....	172.4	179.0	182.5	182.92	16,731,675	89.5	123.0
New York.....	176.0	178.5	186.5	183.0	135,529,769	87.4	120.4
New Jersey.....	178.0	192.0	192.0	a 190.0	a 28,741,670	a 67.8	a 115.1
Pennsylvania.....	127.2	133.4	147.6	160.0	121,529,000	76.3	114.3
South Atlantic Division:							
Delaware.....	132.0	158.0	166.0	b c 160.0	b c 3,640,881	b c 74.6	b c 109.7
Maryland.....	183.0	187.0	184.0	188.0	21,909,896	66.7	106.9
District of Columbia.....	200.0	193.0	178.0	184.0	5,768,032	85.3	141.8
Virginia.....	93.2	112.8	118.2	120.0	24,464,880	41.0	69.3
West Virginia.....	76.8	90.0	97.0	100.0	13,538,100	49.7	61.9
North Carolina.....	b 50.0	50.0	59.2	63.1	14,531,993	23.9	39.2
South Carolina.....	b 100.0	70.0	69.6	86.0	14,199,890	31.3	62.6
Georgia.....	59.0	b 65.0	83.3	110.5	28,977,273	41.8	66.3
Florida.....	.....	.....	b 120.0	97.4	6,247,041	41.4	64.5
South Central Division:							
Kentucky.....	b 110.0	102.0	94.0	115.0	32,218,000	51.0	68.9
Tennessee.....	b 77.0	66.0	86.0	a 86.0	a 28,464,108	a 46.0	a 61.4
Alabama.....	66.5	81.3	73.5	b 73.0	b 13,512,300	b 22.2	b 44.2
Mississippi.....	110.0	74.5	b 86.0	112.1	29,080,524	56.8	81.1
Louisiana.....	b 65.0	78.8	100.6	a 105.0	a 11,270,063	a 28.1	a 72.5
Texas.....	b 140.0	71.7	106.0	100.0	41,806,925	46.1	69.6
Arkansas.....	.....	.....	b 75.0	73.0	12,157,712	28.1	42.6
Oklahoma.....	.....	.....	.....	77.0	1,306,515	17.6	42.1
North Central Division:							
Ohio.....	165.0	152.0	160.5	160.0	93,375,840	87.8	115.3
Indiana.....	98.5	136.0	130.0	a 133.0	a 49,382,634	a 74.2	a 95.4
Illinois.....	146.7	150.0	155.4	148.0	98,173,605	80.2	114.7
Michigan.....	140.0	150.0	156.0	145.0	41,481,463	67.1	88.4
Wisconsin.....	155.0	165.0	158.6	160.0	b 40,538,320	b 71.7	b 105.1
Minnesota.....	b 83.0	94.0	128.0	154.8	32,396,806	72.0	95.9
Iowa.....	130.0	148.0	156.0	158.0	52,362,464	86.0	100.2
Missouri.....	90.0	b 104.0	129.4	121.0	56,851,414	63.1	86.5
North Dakota.....	.....	.....	113.0	120.0	3,876,548	52.8	81.8
South Dakota.....	b 75.0	b 96.0	145.0	c 100.7	b 5,671,495	b 48.3	b 64.6
Nebraska.....	72.0	82.0	140.0	129.0	22,084,542	63.4	80.9
Kansas.....	116.0	120.0	135.0	125.0	31,526,875	71.8	80.1
Western Division:							
Montana.....	b 89.0	96.0	142.7	144.5	2,373,162	67.5	92.3
Wyoming.....	b 200.0	119.0	b 120.0	101.0	942,411	49.8	91.4
Colorado.....	.....	b 132.0	144.4	c 150.1	b 7,974,363	b 73.2	b 94.4
New Mexico.....	b 111.0	111.0	b 67.0	85.0	1,443,895	26.2	67.3
Arizona.....	0	109.0	126.0	a 195.0	a 1,349,595	a 69.8	a 119.2
Utah.....	152.0	128.0	133.0	152.0	6,052,792	76.8	104.5
Nevada.....	142.0	143.0	140.0	150.4	759,069	80.6	111.2
Idaho.....	b 45.0	94.0	b 69.8	109.4	1,753,682	55.5	72.3
Washington.....	b 80.0	b 91.0	97.2	102.4	5,980,058	67.5	69.0
Oregon.....	b 90.0	90.0	118.2	109.0	6,429,256	61.1	82.5
California.....	123.0	146.6	157.6	159.0	26,181,576	81.8	107.6

a In 1892-93.

b Approximately.

c In 1891-92.

TABLE 7.—*Number and sex of teachers. Proportion of male teachers.*

State or Territory.	Whole number of teachers employed.			Percentage of male teachers.			
	Males.	females.	Total.	1870-71.	1879-80.	1880-90.	1893-94.
1	2	3	4	5	6	7	8
United States.....	124,768	263,239	388,007	41.0	42.8	34.5	32.2
North Atlantic Division.....	18,124	77,340	95,464	26.2	28.8	20.0	19.0
South Atlantic Division.....	28,401	24,877	53,278	63.8	62.5	49.1	45.1
South Central Division.....	29,896	25,729	55,624	67.5	67.2	57.5	53.7
North Central Division.....	56,463	121,414	177,877	43.2	41.7	32.4	29.4
Western Division.....	5,825	18,879	19,704	45.0	40.3	31.1	29.6
North Atlantic Division:							
Maine.....	a 1,406	a 5,925	7,421	a 24.4	a 27.2	a 16.0	a 20.2
New Hampshire.....	289	2,907	3,197	15.0	16.8	9.8	8.8
Vermont.....	428	8,280	3,728	16.5	16.8	12.0	11.7
Massachusetts.....	1,608	10,705	11,714	12.7	12.2	9.8	8.6
Rhode Island.....	179	1,584	1,554	a 20.4	20.2	12.6	10.9
Connecticut.....	a 434	a 3,368	a 3,822	a 22.1	a 22.8	a 13.4	a 11.4
New York.....	5,086	27,838	32,929	22.9	26.0	16.9	15.5
New Jersey.....	7,737	b 4,131	b 4,868	32.5	28.5	18.4	b 15.1
Pennsylvania.....	8,464	17,777	26,241	42.8	45.5	34.2	32.3
South Atlantic Division:							
Delaware.....	c 218	c 622	c 840	a 29.9	a 48.6	a 31.0	c 28.0
Maryland.....	905	3,323	4,318	45.0	42.6	27.8	23.0
District of Columbia.....	118	824	942	8.2	7.8	13.0	12.5
Virginia.....	3,028	5,185	8,213	64.5	61.8	41.5	36.9
West Virginia.....	3,563	2,530	6,115	79.0	75.2	63.4	58.6
North Carolina.....	4,535	3,825	8,360	a 73.2	a 71.3	59.1	54.2
South Carolina.....	2,141	2,453	4,594	62.4	59.5	49.6	46.6
Georgia.....	4,547	4,486	9,033	71.4	a 65.2	53.2	50.3
Florida.....	1,294	1,629	2,923	a 65.7	61.6	48.0	44.3
South Central Division:							
Kentucky.....	4,505	5,303	9,808	a 66.0	64.6	49.8	45.9
Tennessee.....	b 5,146	b 3,006	b 8,112	a 75.0	74.4	61.8	b 58.4
Alabama.....	a 4,168	a 2,440	6,608	66.8	63.8	62.9	a 63.1
Mississippi.....	3,624	3,953	7,577	a 60.8	61.2	49.6	47.8
Louisiana.....	b 1,280	b 1,945	b 3,244	50.9	46.1	44.7	b 40.0
Texas.....	6,508	5,800	12,462	a 77.3	a 75.0	61.1	52.7
Arkansas.....	4,287	2,019	6,286	a 75.6	73.4	68.5	67.9
Oklahoma.....	323	504	827				39.1
North Central Division:							
Ohio.....	10,156	14,748	24,904	43.2	47.8	43.1	40.8
Indiana.....	b 6,523	b 7,024	b 13,547	68.5	57.5	51.1	b 48.2
Illinois.....	6,123	16,734	22,857	43.5	39.7	32.5	26.8
Michigan.....	3,479	12,711	16,190	26.3	29.2	22.3	21.5
Wisconsin.....	2,307	10,274	12,581	a 28.8	28.0	19.8	18.3
Minnesota.....	2,234	8,088	10,322	33.7	35.0	23.0	21.6
Iowa.....	5,281	22,782	28,063	39.0	33.6	20.6	18.8
Missouri.....	5,597	8,954	14,521	65.3	56.1	44.4	38.3
North Dakota.....	812	1,888	2,700			28.3	30.1
South Dakota.....	1,303	3,448	4,816	a 24.7	40.8	29.0	28.4
Nebraska.....	2,393	7,080	9,473	51.9	40.7	27.1	25.3
Kansas.....	4,229	7,683	11,903	47.2	45.1	40.8	35.5
Western Division:							
Montana.....	208	674	880	a 60.3	38.5	22.9	23.4
Wyoming.....	98	311	407	a 28.6	44.3	22.4	23.6
Colorado.....	a 708	a b 2,195	b 2,895	48.8	36.4	26.2	a b 24.2
New Mexico.....	324	222	546	a 91.7	78.0	a 62.2	59.3
Arizona.....	b 87	b 196	b 283		47.5	38.8	b 30.7
Utah.....	470	645	1,115	55.0	54.5	46.6	42.1
Nevada.....	42	237	279	32.4	46.7	16.3	15.1
Idaho.....	301	411	712	a 64.3	57.4	a 33.4	42.3
Washington.....	1,150	2,018	3,168	a 46.5	37.4	40.6	36.3
Oregon.....	1,198	1,976	3,162	a 51.7	48.3	42.3	37.5
California.....	1,208	4,994	6,257	40.0	33.6	21.4	20.2

a Approximately.

b In 1892-93.

c In 1891-92.

TABLE 8.—Teachers' salaries.

State or Territory.	Average monthly wages of male teachers.	Increase or decrease.	Average monthly wages of female teachers.	Increase or decrease.
1	2	3	4	5
United States <i>a</i>	\$44. 76	D .. \$0. 16	\$37. 48	I .. \$0. 81
North Atlantic Division <i>a</i>	54. 89	D .. .67	37. 09	I .. .14
South Atlantic Division <i>a</i>	28. 11	D .. .80	25. 45	D .. .90
South Central Division <i>a</i>	41. 01	I .. 1. 24	35. 24	I .. 2. 19
North Central Division <i>a</i>	45. 70	I .. .03	37. 59	I .. 1. 29
Western Division <i>a</i>	64. 46	D .. 1. 14	54. 40	D .. .29
North Atlantic Division:				
Maine	44. 81	D .. .81	27. 56	I .. .16
New Hampshire	49. 78	I .. .95	27. 36	I .. .36
Vermont	37. 86	I .. 3. 80	26. 12	I .. .84
Massachusetts	129. 41	D .. 11. 32	47. 91	D .. .22
Rhode Island	101. 19	I .. 4. 90	50. 10	I .. .66
Connecticut	85. 87	D .. .61	41. 48	I .. .84
New York <i>b</i>	79. 99	.....	47. 73	.....
New Jersey (1892-93)	44. 16	I .. .23	33. 05	I .. .01
Pennsylvania	30. 60	.....	34. 08	.....
South Atlantic Division:				
Delaware (1889-90)	33. 13	I .. .07	27. 14	D .. .35
Maryland	24. 60	D .. .72	21. 68	D .. .92
District of Columbia	23. 13	D .. 2. 46	19. 90	D .. 2. 01
Virginia	35. 50	.....	34. 00	.....
West Virginia	41. 26	.....	34. 02	.....
North Carolina	33. 45	.....	27. 82	.....
South Carolina	29. 49	I .. 2. 12	29. 75	I .. 3. 15
Georgia	34. 50	.....	31. 32	.....
Florida	56. 71	.....	46. 48	.....
South Central Division:	37. 43	I .. .40	33. 47	I .. .30
Kentucky	41. 98	I .. .04	37. 50	I .. 1. 03
Tennessee (1892-93)	46. 00	.....	40. 20	.....
Alabama	58. 96	D .. 1. 94	49. 35	I .. 2. 28
Mississippi	48. 56	I .. .33	35. 19	I .. .83
Louisiana (1892-93)	47. 30	I .. 3. 60	33. 15	I .. 8. 67
Texas (1892-93)	46. 49	D .. .47	35. 08	D .. .42
Arkansas	38. 19	D .. .54	31. 60	I .. .79
Oklahoma	45. 94	I .. 1. 83	42. 23	I .. .93
North Central Division:	44. 75	I .. 2. 74	39. 03	I .. 2. 81
Ohio	36. 00	.....	32. 00	.....
Indiana (1892-93)	46. 74	D .. .85	39. 52	I .. 1. 46
Illinois	43. 09	D .. .82	35. 01	D .. .43
Michigan	65. 20	.....	46. 95	.....
Wisconsin	66. 70	D .. 2. 89	49. 15	D .. .78
Minnesota	72. 76	.....	53. 75	.....
Iowa	87. 50	.....	72. 50	.....
Missouri	70. 00	.....	44. 00	.....
North Dakota	101. 24	D .. .63	63. 65	D .. .13
South Dakota	51. 45	D .. .82	46. 08	I .. .50
Nebraska	50. 00	D .. 1. 11	39. 56	D .. 2. 18
Kansas	d 80. 10	D .. 1. 35	d 65. 42	I .. .13
Western Division:				
Montana .....	.....	.....	.....	.....
Wyoming .....	.....	.....	.....	.....
Colorado .....	.....	.....	.....	.....
New Mexico .....	.....	.....	.....	.....
Arizona (1892-93) .....	.....	.....	.....	.....
Utah .....	.....	.....	.....	.....
Nevada .....	.....	.....	.....	.....
Idaho .....	.....	.....	.....	.....
Washington .....	.....	.....	.....	.....
Oregon .....	.....	.....	.....	.....
California .....	.....	.....	.....	.....

a These summaries include only the States tabulated below in the same column.*b* Average of all teachers, \$50.88.*c* Does not include cities.*d* Does not include high school teachers.

TABLE 9.—Schoolhouses and value of school property.

State or Territory.	Number of schoolhouses.	Value of all school property.
1	2	3
United States	236, 529	\$425, 024, 341
North Atlantic Division	46, 546	160, 423, 841
South Atlantic Division	34, 648	18, 299, 877
South Central Division	43, 014	20, 786, 384
North Central Division	100, 854	188, 908, 099
Western Division	11, 467	86, 606, 140
North Atlantic Division:		
Maine	4, 320	3, 917, 129
New Hampshire	1, 998	3, 086, 824
Vermont	2, 208	1, 022, 087
Massachusetts	a 7, 833	b 32, 200, 000
Rhode Island	505	3, 864, 863
Connecticut	1, 622	8, 042, 411
New York	12, 005	53, 028, 319
New Jersey (1892-93)	1, 725	10, 374, 218
Pennsylvania	14, 330	b 44, 890, 000
South Atlantic Division:		
Delaware (1891-92)	a 497	904, 426
Maryland	a 2, 330	b 3, 070, 000
District of Columbia	106	b 2, 738, 000
Virginia	6, 718	2, 940, 690
West Virginia	5, 302	3, 120, 927
North Carolina	6, 657	1, 150, 148
South Carolina	3, 138	6, 617, 059
Georgia	a 7, 849	b 2, 290, 000
Florida	2, 051	559, 637
South Central Division:		
Kentucky	8, 013	5, 803, 542
Tennessee (1892-93)	6, 817	2, 950, 004
Alabama	b 6, 687	b 1, 873, 000
Mississippi	5, 984	1, 529, 869
Louisiana (1892-93)	a 2, 645	b 532, 000
Texas	8, 380	6, 128, 883
Arkansas	3, 866	1, 769, 086
Oklahoma	622	400, 000
North Central Division:		
Ohio	13, 064	89, 017, 384
Indiana (1892-93)	9, 737	16, 777, 504
Illinois	12, 516	34, 716, 434
Michigan	7, 769	16, 583, 399
Wisconsin	6, 795	b 11, 100, 000
Minnesota	6, 485	12, 875, 194
Iowa	13, 519	15, 520, 169
Missouri	9, 840	17, 208, 288
North Dakota	1, 770	1, 910, 639
South Dakota	3, 432	3, 434, 805
Nebraska	6, 593	8, 570, 887
Kansas	9, 334	11, 193, 396
Western Division:		
Montana	529	2, 079, 362
Wyoming	257	396, 914
Colorado	1, 509	5, 998, 937
New Mexico	482	b 250, 000
Arizona (1892-93)	133	419, 700
Utah	a c 893	3, 189, 447
Nevada	190	282, 946
Idaho	550	733, 211
Washington	1, 751	5, 014, 396
Oregon	1, 795	2, 707, 182
California	3, 369	15, 534, 045

a Number of schools.

b Approximately.

c In 1892-93.

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TABLE 10.—*Private schools.*

State or Territory.	Pupils attending private schools.	Total public and private enrollment.	Per cent of pupils in private schools.
1	2	3	4
United States.....	1,318,800	15,254,777	8.64
North Atlantic Division.....	551,300	3,945,014	14.24
South Atlantic Division.....	84,700	2,066,036	4.09
South Central Division.....	187,200	2,839,995	6.58
North Central Division.....	441,000	5,788,952	7.60
Western Division.....	54,600	704,780	7.75
North Atlantic Division:			
Maine.....			
New Hampshire.....	7,425	69,962	10.63
Vermont (1891-92).....	7,857	73,171	10.74
Massachusetts.....	96,163	466,772	14.17
Rhode Island.....	15,155	70,826	21.40
Connecticut.....	25,965	162,914	16.03
New York.....	178,764	1,363,762	13.71
New Jersey (1892-93).....	49,167	296,765	16.46
Pennsylvania.....			
South Atlantic Division:			
Delaware.....			
Maryland.....			
District of Columbia.....			
Virginia.....			
West Virginia.....	1,694	220,799	.86
North Carolina (1891-92).....	26,198	361,566	7.25
South Carolina.....			
Georgia.....	14,151	450,833	3.14
Florida.....			
South Central Division:			
Kentucky.....	19,200	386,315	4.97
Tennessee (1891-92).....	45,428	532,935	8.53
Alabama.....			
Mississippi.....	19,943	365,527	5.46
Louisiana.....			
Texas.....			
Arkansas.....			
Oklahoma.....			
North Central Division:			
Ohio.....			
Indiana.....			
Illinois.....	125,636	981,574	12.80
Michigan.....	44,842	513,821	8.73
Wisconsin.....	25,292	410,912	6.15
Minnesota.....			
Iowa.....	34,103	556,834	6.12
Missouri.....	16,738	674,241	2.48
North Dakota.....	400	47,781	.84
South Dakota.....	1,888	89,714	2.10
Nebraska.....			
Kansas.....			
Western Division:			
Montana.....	839	26,559	3.16
Wyoming.....			
Colorado (1892-93).....	3,813	80,902	4.71
New Mexico.....	4,129	25,000	16.13
Arizona.....			
Utah (1891-92).....	10,934	66,382	16.47
Nevada.....	388	7,215	5.38
Idaho.....			
Washington.....	2,925	89,645	3.26
Oregon.....	5,112	83,053	6.15
California.....	21,779	265,028	8.22

a Does not include cities.

TABLE 11.—Receipts of school moneys.

State or Territory.	From per- manent funds and rents.	From taxation.			From all other sources.	Total rev- enue, excluding balance on hand and pro- ceeds of bond sales.
		From State taxes.	From local taxes.	Total from taxation.		
1	2	3	4	5	6	7
United States.....	\$3,486,052	\$33,074,152	\$111,255,258	\$144,329,410	\$14,235,930	\$167,051,392
North Atlantic Division...	933,609	12,017,287	40,227,050	52,244,337	5,804,003	58,981,940
South Atlantic Division...	447,436	4,408,622	5,026,474	9,435,096	548,228	10,430,780
South Central Division...	1,907,666	6,531,603	3,570,481	10,102,084	625,309	12,635,059
North Central Division...	4,451,120	7,331,267	54,925,572	62,256,839	6,173,446	72,881,405
Western Division.....	746,221	2,785,373	7,505,681	10,291,054	1,084,944	12,122,219
North Atlantic Division:						
Maine.....	a 50,000	a 456,003	979,744	1,435,747	76,911	1,562,658
New Hampshire.....	14,753	86,817	729,176	815,993	60,963	891,709
Vermont.....	66,255	88,026	519,920	607,946	24,461	698,662
Massachusetts.....	b 183,733	0	9,778,644	9,778,644	5,850	9,966,227
Rhode Island.....	8,547	118,199	1,022,241	1,140,440	43,724	1,192,711
Connecticut.....	168,302	254,185	1,713,649	1,967,834	373,592	2,509,728
New York (1892-93).....	294,359	3,771,667	12,884,903	16,656,570	2,271,361	19,222,290
New Jersey (1892-93).....	147,680	2,251,700	1,460,007	3,711,707	7,820	3,867,187
Pennsylvania.....	0	4,990,690	11,138,766	16,129,456	2,939,321	19,068,777
South Atlantic Division:						
Delaware (1899-90) a.....	60,000	c 6,000	209,000	215,000	0	275,000
Maryland.....	54,911	585,234	1,335,126	1,920,360	220,264	2,195,535
District of Columbia.....	0	d 465,262	465,262	930,524	0	930,524
Virginia.....	43,000	887,840	814,339	1,702,179	29,273	1,774,452
West Virginia.....	a 42,167	a 259,049	1,280,135	1,539,184	22,896	1,604,247
North Carolina.....	0	646,543	13,323	659,866	117,213	777,079
South Carolina (1892-93).....	0	449,068	73,620	522,688	14,141	536,829
Georgia.....	212,052	1,008,752	389,702	1,398,454	64,019	1,674,525
Florida.....	35,306	100,874	445,967	546,841	e 80,422	662,569
South Central Division:						
Kentucky.....	144,818	1,766,140	1,305,996	3,072,136	0	3,216,954
Tennessee (1892-93).....	124,884	1,240,931	(f)	1,240,931	250,939	1,616,654
Alabama.....	115,887	513,674	g 141,861	655,535	9,531	780,953
Mississippi.....	96,640	923,500	171,931	1,095,431	19,771	1,211,842
Louisiana (1892-93).....	46,076	275,223	418,769	693,992	231,877	971,945
Texas.....	1,379,261	1,269,679	764,464	2,034,143	181,907	3,595,411
Arkansas.....	0	486,431	676,460	1,162,891	26,231	1,189,122
Oklahoma.....	0	a 56,025	a 91,000	a 147,025	a 5,153	152,178
North Central Division:						
Ohio.....	246,680	1,877,585	9,569,391	11,466,976	624,400	12,338,056
Indiana (1891-92).....	635,327	1,638,548	2,872,173	4,510,721	463,607	5,609,655
Illinois.....	667,061	1,000,000	12,921,238	13,921,238	546,885	15,135,184
Michigan (1892-93).....	311,578	686,117	4,569,005	5,275,122	432,981	6,019,681
Wisconsin.....	a 190,000	a 584,145	3,510,056	4,094,201	450,612	4,734,813
Minnesota.....	388,200	655,718	3,241,502	3,897,220	611,994	4,897,414
Iowa.....	233,570	0	6,942,953	6,942,953	1,200,405	8,376,937
Missouri.....	727,332	613,189	8,886,848	4,500,037	385,905	5,613,274
North Dakota.....	154,126	152,867	630,431	783,298	53,715	991,139
South Dakota.....	146,220	0	1,006,968	1,006,968	186,609	1,339,857
Nebraska.....	396,161	123,098	2,295,518	2,418,616	919,101	3,733,878
Kansas.....	a 354,856	0	3,439,489	3,439,489	297,172	4,091,517
Western Division:						
Montana.....	0	0	560,119	560,119	27,049	583,168
Wyoming.....	0	0	193,980	193,980	4,797	198,777
Colorado (1891-92).....	108,463	0	1,462,109	1,462,109	753,182	2,322,754
New Mexico.....	0	0	82,136	82,136	43,687	125,823
Arizona (1892-93).....	6,573	178,164	49,375	227,539	111	224,223
Utah.....	98,002	302,590	458,178	760,774	38,780	799,554
Nevada.....	14,831	11,941	83,770	95,711	1,080	184,703
Idaho.....	25,904	0	303,641	303,641	2,784	320,766
Washington.....	162,848	0	1,179,617	1,179,617	10,181	1,285,652
Oregon.....	0	0	744,397	744,397	140,404	1,047,749
California.....	a 260,000	2,292,672	2,388,359	4,681,031	66,929	5,007,960

a Approximately.

b Includes some miscellaneous receipts.

c State appropriation for negro schools.

d United States appropriation.

e Includes balance from previous year.

f Not reported; a part is included in "other sources."

g Report incomplete.

TABLE 12.—The school revenue compared (1) with the adult male population (taxpayers) and (2) with the school population. Percentage analysis of the school revenue.

State or Territory.	Average amount raised per tax- payer.					Average amount raised for each child 5 to 18 years of age.	Per cent of the whole reve- nue derived from—			
	From permanent funds and rents.	From State taxes.	From local taxes.	From other sources.	Total per tax- payer.		Permanent funds and rents.	State taxes.	Local taxes.	Other sources.
1	2	3	4	5	6	7	8	9	10	11
United States.....	\$0.46	\$1.70	\$0.04	\$0.78	\$0.07	\$8.32	Per ct. 5.1	Per ct. 19.8	Per ct. 66.6	Per ct. 8.5
North Atlantic Division.....	.17	2.22	7.44	1.08	10.01	12.47	1.6	20.4	68.2	9.8
South Atlantic Division.....	.21	2.05	2.34	.26	4.86	8.25	4.3	42.3	48.2	5.2
South Central Division.....	.00	2.35	1.29	.22	4.55	3.02	15.1	51.7	28.3	4.9
North Central Division.....	.66	1.09	8.20	.92	10.87	10.30	6.1	10.1	75.4	8.4
Western Division.....	.53	1.99	5.37	.79	8.68	13.67	6.2	23.0	61.9	8.9
North Atlantic Division:										
Maine.....	a .25	a 2.32	4.98	.40	7.95	9.84	a 3.2	a 29.2	62.7	4.9
New Hampshire.....	.12	.71	5.97	.51	7.31	10.20	1.7	9.7	81.8	6.8
Vermont.....	.65	.87	5.11	.24	6.87	8.33	9.5	12.6	74.4	3.5
Massachusetts.....	b .26	0	13.59	.01	13.86	18.00	b 1.8	0	98.1	.1
Rhode Island.....	.08	1.05	9.06	.38	10.57	12.55	7	9.9	85.7	3.7
Connecticut.....	.71	1.07	7.19	1.56	10.53	13.43	6.7	10.1	68.3	14.9
New York (1892-93).....	.16	2.07	7.07	1.24	10.54	12.66	1.5	19.6	67.0	11.9
New Jersey (1892-93).....	.32	4.83	3.13	.02	8.30	9.12	3.8	58.2	37.8	.2
Pennsylvania.....	0	3.15	7.02	1.85	12.02	11.97	0	26.2	58.4	15.4
South Atlantic Division:										
Delaware (1889-90) a.....	1.26	c .13	4.39	0	5.78	5.79	21.8	c 2.2	76.0	0
Maryland.....	.19	2.07	4.72	.78	7.76	6.89	2.5	26.7	60.8	10.0
District of Columbia.....	0	d 6.24	6.24	0	12.48	13.76	0	d 50.0	50.0	0
Virginia.....	.11	2.22	2.04	.07	4.44	2.98	2.4	50.0	45.9	1.7
West Virginia.....	a .22	a 1.34	6.65	.12	8.33	5.89	a 2.6	a 16.1	79.8	1.5
North Carolina.....	0	1.78	.04	.31	2.13	1.28	0	83.2	1.7	15.1
South Carolina.....	0	1.80	.29	.06	2.15	1.19	0	63.6	13.7	2.7
Georgia.....	.50	2.38	.92	.16	3.96	2.41	12.7	60.2	22.3	5.8
Florida.....	.32	.90	8.90	e .72	5.93	4.39	5.3	15.3	67.2	e 12.3
South Central Division:										
Kentucky.....	.31	8.77	2.79	0	6.87	5.09	4.5	54.9	40.6	0
Tennessee (1892-93).....	.30	3.02	(f)	.61	3.93	2.62	7.7	76.8	(f)	15.5
Alabama.....	.32	1.40	g .39	.03	2.14	1.28	14.8	65.8	g 18.2	1.2
Mississippi.....	.33	3.15	.59	.06	4.13	2.37	8.0	76.2	14.2	1.6
Louisiana (1892-93).....	.17	1.04	1.59	.88	3.68	2.42	4.7	28.3	43.1	23.9
Texas.....	2.23	2.05	1.24	.29	5.81	3.97	38.4	35.3	21.3	5.0
Arkansas.....	0	1.75	2.45	.69	4.29	2.75	0	40.9	56.9	2.2
Oklahoma.....	0	a .74	a 1.17	a .09	2.00	2.05	0	a 36.8	a 59.8	a 3.4
North Central Division:										
Ohio.....	.24	1.81	9.24	.60	11.69	11.60	2.0	15.2	77.7	5.1
Indiana (1891-92).....	1.06	2.73	4.79	.77	9.35	8.59	11.3	20.2	51.2	8.3
Illinois.....	.55	.32	10.64	.45	12.46	12.37	4.4	6.6	85.4	3.6
Michigan (1892-93).....	.49	1.07	7.18	.68	9.42	10.00	5.2	11.4	70.2	7.2
Wisconsin.....	a .37	a 1.13	6.77	.87	9.14	8.37	a 4.0	a 12.3	74.1	9.6
Minnesota.....	.86	1.46	7.22	1.36	10.90	10.89	7.9	13.4	66.2	12.5
Iowa.....	.43	0	12.64	2.19	15.26	13.75	2.8	0	82.9	14.3
Missouri.....	.95	.80	5.10	.51	7.36	6.23	13.0	10.9	69.2	6.9
North Dakota.....	1.87	1.86	7.66	.65	12.04	13.51	15.6	15.4	63.6	5.4
South Dakota.....	1.24	0	8.53	1.58	11.35	11.40	10.9	0	75.2	13.9
Nebraska.....	1.20	.37	6.97	2.81	11.35	10.73	10.6	3.8	61.5	24.6
Kansas.....	a .95	0	9.22	.80	10.97	9.32	a 8.7	0	84.1	7.2
Western Division:										
Montana.....	0	0	5.81	.24	6.05	10.59	0	0	96.0	4.0
Wyoming.....	0	0	4.91	.12	5.03	10.50	0	0	97.6	2.4
Colorado (1891-92).....	.59	0	7.95	4.09	12.63	22.98	4.7	0	62.9	32.4
New Mexico.....	.00	0	1.43	.76	2.19	2.28	0	0	65.3	34.7
Arizona (1892-93).....	.22	5.89	1.63	.....	7.74	12.11	2.8	76.1	21.1	.....
Utah.....	0	4.75	7.20	.61	12.56	10.14	0	37.8	57.3	4.9
Nevada.....	4.98	.61	4.25	.05	9.89	20.70	50.3	6.1	43.0	.6
Idaho.....	.33	0	6.97	.06	7.36	10.15	4.5	0	94.7	.8
Washington.....	.50	0	6.12	.05	6.67	12.37	7.5	0	91.8	.7
Oregon.....	1.17	0	5.36	1.01	7.54	9.96	15.6	0	71.0	13.4
California.....	a .50	4.44	4.63	.13	9.70	15.65	a 5.2	45.8	47.7	1.3

a Approximately.

b Includes some miscellaneous receipts.

c State appropriation for negro schools.

d United States appropriation.

e Includes balance from previous year.

f Not reported; a part is included in "other sources."

g Report incomplete.

STATE SCHOOL SYSTEMS.

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TABLE 13.—*Progress of school expenditure.*

State or Territory.	Total expenditure for common schools.				Expended per capita of population.			
	1870-71.	1879-80.	1889-90.	1893-94.	1870-71.	1879-80.	1889-90.	1893-94.
1	2	3	4	5	6	7	8	9
United States.....	\$69,107,612	\$78,094,687	\$140,506,715	\$170,384,173	\$1.75	\$1.56	\$2.24	\$2.51
North Atlantic Division.	29,796,835	28,538,058	48,023,492	59,081,591	2.38	1.97	2.76	3.17
South Atlantic Division.	3,781,581	5,130,492	8,767,185	10,590,070	.63	.68	.99	1.12
South Central Division.	4,854,834	4,872,829	10,678,680	12,965,805	.73	.55	.97	1.06
North Central Division.	28,430,033	35,285,635	62,823,563	74,861,983	2.14	2.03	2.81	3.10
Western Division.	2,244,329	4,267,673	10,213,815	12,884,724	2.15	2.41	3.37	3.53
North Atlantic Division:								
Maine.....	950,662	1,067,991	1,327,553	1,557,862	1.51	1.65	2.01	2.41
New Hampshire.....	418,545	565,339	844,833	920,803	1.30	1.63	2.24	2.87
Vermont.....	499,961	446,217	711,072	783,805	1.51	1.34	2.14	2.96
Massachusetts.....	5,579,363	4,983,900	8,286,062	9,968,227	3.73	2.80	3.70	4.12
Rhode Island.....	461,160	526,112	884,966	1,478,841	2.05	1.90	2.56	3.80
Connecticut.....	1,496,981	1,408,375	2,157,014	2,642,628	2.74	2.26	2.89	3.33
New York.....	9,607,904	10,296,977	17,543,880	19,308,571	2.17	2.03	2.92	3.07
New Jersey.....	2,302,341	1,873,465	3,340,190	3,834,103	2.48	1.66	2.31	2.35
Pennsylvania.....	8,479,918	7,369,682	12,928,422	18,586,751	2.36	1.72	2.46	3.26
South Atlantic Division:								
Delaware.....	153,509	207,281	b 275,000	b c 275,000	1.21	1.41	1.63	b c 1.63
Maryland.....	1,214,729	1,944,367	1,910,663	2,301,118	1.53	1.65	1.83	2.11
District of Columbia.	373,535	438,567	905,777	930,524	2.77	2.47	3.93	3.49
Virginia.....	587,472	946,109	1,004,509	1,825,433	4.7	.63	.97	1.05
West Virginia.....	577,719	707,553	1,198,493	1,611,642	1.26	1.14	1.57	1.99
North Carolina.....	177,498	376,062	714,900	783,405	.16	.27	.44	.46
South Carolina.....	275,688	324,629	450,636	532,767	.38	.33	.39	.44
Georgia.....	292,000	471,029	1,190,354	1,693,006	.24	.31	.65	.86
Florida.....	129,431	114,895	516,533	647,175	.66	.43	1.32	1.42
South Central Division:								
Kentucky.....	b 1,075,000	1,069,080	2,140,678	3,315,024	.80	.65	1.15	1.72
Tennessee.....	b 758,000	744,180	1,526,241	1,647,799	.59	.48	.86	.91
Alabama.....	b 370,000	b 500,000	b 890,000	663,259	.36	.40	.59	.39
Mississippi.....	960,000	830,705	1,109,575	1,225,146	1.11	.73	.86	.88
Louisiana.....	531,834	411,858	817,110	a 992,000	.71	.44	.73	a .84
Texas.....	b 650,000	b 1,030,000	3,178,300	3,765,501	.74	.65	1.42	1.42
Arkansas.....	b 520,000	287,056	1,016,776	1,244,818	1.02	.36	.90	1.03
Oklahoma.....				202,158				.83
North Central Division:								
Ohio.....	6,831,035	7,166,963	10,602,238	12,524,444	2.52	2.24	2.80	3.34
Indiana.....	2,897,537	4,491,850	5,245,218	d 5,609,655	1.70	2.27	2.39	d 2.54
Illinois.....	6,656,542	7,014,092	11,645,126	15,897,450	2.57	2.28	3.04	3.67
Michigan.....	2,840,740	2,775,917	5,349,366	5,978,366	2.33	1.70	2.55	2.66
Wisconsin.....	1,932,539	2,177,023	3,801,212	4,801,390	1.70	1.65	2.25	2.54
Minnesota.....	900,558	1,328,429	4,187,310	5,020,882	2.06	1.70	3.23	3.23
Iowa.....	3,209,190	4,484,043	6,382,953	7,840,098	2.70	2.76	3.34	3.88
Missouri.....	1,749,049	2,675,364	5,434,262	5,816,634	.99	1.23	2.03	2.01
North Dakota.....		626,949		1,061,609		1.29	3.43	4.02
South Dakota.....	b 23,000	245,000	1,199,630	1,687,918		1.81	3.65	4.21
Nebraska.....	365,520	1,108,617	3,876,332	4,165,087	2.61	2.45	3.19	3.60
Kansas.....	904,323	1,818,337	4,972,967	4,438,450	2.24	1.83	3.48	3.19
Western Division:								
Montana.....	b 35,600	78,730	364,064	643,749	1.62	2.01	2.76	3.31
Wyoming.....	b 7,000	28,504	b 225,000	203,181	.71	1.37	3.71	2.29
Colorado.....	67,385	395,227	1,681,379	d 1,981,635	1.44	2.03	4.08	d 4.31
New Mexico.....	b 4,900	28,973	b 85,000	137,905	.05	.24	.55	.70
Arizona.....	0	61,172	181,914	a 216,779	0	1.51	3.05	a 2.85
Utah.....	b 117,000	132,194	394,685	963,151	1.28	.92	1.90	3.96
Nevada.....	b 85,000	220,245	181,481	203,140	1.93	3.54	3.53	4.72
Idaho.....	19,003	38,411	169,020	346,332	1.17	1.18	2.00	2.97
Washington.....	b 35,000	112,615	968,111	1,525,948	1.30	1.60	2.74	3.33
Oregon.....	b 160,000	307,031	805,979	1,238,111	1.65	1.76	2.57	3.07
California.....	1,713,431	2,864,571	5,187,162	5,424,793	2.93	3.31	4.29	4.02

a In 1892-93.

b Estimated.

c In 1889-90.

d In 1891-92.

TABLE 14.—*The school expenditure classified.*

State or Territory.	For sites, buildings, furniture, libraries, and apparatus.	For salaries of teachers and superintendents.	For other purposes.	Total expenditure, excluding payment of bonds.
1	2	3	4	5
United States.....	\$29,237,231	\$108,520,730	\$32,626,212	\$170,384,173
North Atlantic Division.....	11,396,941	34,723,843	12,980,807	59,081,591
South Atlantic Division.....	1,166,351	8,128,153	1,295,566	10,590,070
South Central Division.....	1,406,015	10,719,413	840,877	12,965,805
North Central Division.....	12,584,193	48,746,060	15,531,730	74,861,983
Western Division.....	2,683,731	8,203,261	1,997,732	12,884,724
North Atlantic Division:				
Maine.....	169,084	a 1,112,807	255,971	1,557,862
New Hampshire.....	163,691	622,944	134,168	920,803
Vermont.....	105,186	599,063	109,556	783,805
Massachusetts.....	1,710,485	b 6,336,351	1,921,381	9,968,227
Rhode Island.....	431,728	781,259	265,854	1,478,841
Connecticut.....	593,350	1,548,148	501,130	2,642,628
New York.....	4,139,296	12,243,017	2,926,258	19,308,571
New Jersey (1892-93).....	667,293	2,511,910	654,900	8,334,103
Pennsylvania.....	3,396,818	8,998,344	c 6,191,589	c 18,586,751
South Atlantic Division:				
Delaware (1889-90).....	d 23,795	225,000	26,205	275,000
Maryland.....	287,082	1,703,140	310,896	2,301,118
District of Columbia.....	95,706	651,075	183,743	930,524
Virginia.....	209,646	1,435,793	179,994	1,825,433
West Virginia.....	288,770	975,767	347,106	1,611,642
North Carolina.....	53,892	634,299	95,214	783,406
South Carolina.....	45,244	454,847	32,676	532,767
Georgia.....	141,883	1,514,798	26,415	1,683,006
Florida.....	e 29,333	533,524	93,318	647,175
South Central Division:				
Kentucky.....	466,316	2,841,122	7,586	3,315,024
Tennessee (1892-93).....	186,801	1,340,446	120,552	1,647,799
Alabama.....	e 18,220	1,618,668	e 26,461	663,359
Mississippi.....	25,346	1,074,521	125,279	1,225,146
Louisiana (1892-93).....	80,342	681,744	229,914	992,000
Texas.....	324,041	3,028,623	322,837	3,675,501
Arkansas.....	193,209	1,051,609	0	1,244,818
Oklahoma.....	b 111,730	b 82,680	b 7,748	202,158
North Central Division:				
Ohio.....	1,618,217	8,027,250	2,878,977	12,524,444
Indiana (1891-92).....	896,220	3,835,919	878,516	5,600,655
Illinois.....	4,231,963	8,958,615	2,706,872	15,897,450
Michigan.....	846,511	3,889,083	1,242,772	5,978,366
Wisconsin.....	787,630	3,159,622	854,138	4,801,390
Minnesota.....	753,023	2,982,696	1,285,161	5,020,882
Iowa.....	1,009,182	4,957,251	1,873,665	7,840,098
Missouri.....	982,120	3,949,124	885,390	5,816,634
North Dakota.....	260,042	510,582	310,965	1,081,609
South Dakota.....	184,900	914,046	588,972	1,687,918
Nebraska.....	617,050	2,490,751	1,051,286	4,165,087
Kansas.....	396,335	3,065,119	974,896	4,436,450
Western Division:				
Montana.....	155,126	376,583	112,040	643,749
Wyoming.....	30,253	189,976	32,952	263,181
Colorado (1891-92).....	659,562	985,137	336,936	1,981,635
New Mexico.....	16,993	163,425	17,487	137,905
Arizona (1892-93).....	42,514	139,993	34,272	216,779
Utah.....	376,471	510,025	76,955	963,451
Nevada.....	9,899	100,797	32,404	203,140
Idaho.....	63,485	204,041	78,806	346,332
Washington.....	374,672	752,519	398,757	1,525,948
Oregon.....	288,403	825,043	124,665	1,238,111
California.....	666,313	4,006,722	752,758	5,425,793

a Includes janitors' services.
b Approximately.

c Includes bonds paid.
d In city of Wilmington only.

e Report incomplete.

TABLE 15.—(1) Amount expended per pupil (based on average attendance); (2) percentage analysis of expenditure; (3) average monthly expense of each pupil.

State or Territory	Average expenditure per pupil (for the whole school year).				Expenditure per pupil per month.		Percentage of total ex- penditure devoted to—		
	For sites, build- ings, etc.	For sala- ries.	For other pur- poses.	Total per pupil.	For sala- ries.	For all pur- poses.	Sites, build- ings, etc.	Sala- ries.	Other pur- poses.
1	2	3	4	5	6	7	8	9	10
United States	\$3.18	\$11.81	\$3.56	\$18.55	\$1.70	\$2.67	Per ct. 17.2	Per ct. 63.7	Per ct. 19.1
North Atlantic Division...	5.10	15.55	5.79	26.44	1.80	3.07	19.3	58.8	21.9
South Atlantic Division...	.95	6.60	1.05	8.60	1.22	1.59	11.0	76.7	12.3
South Central Division...	.83	6.31	.49	7.63	1.26	1.53	10.8	82.7	6.5
North Central Division...	3.51	13.06	4.34	20.91	1.77	2.84	16.8	62.4	20.8
Western Division	6.06	18.52	4.51	29.09	2.68	4.20	20.8	63.7	15.5
North Atlantic Division:									
Maine	2.10	a 12.35	2.84	17.29	a 2.03	2.80	12.1	a 71.4	16.5
New Hampshire	3.90	14.83	3.19	21.92	2.28	3.36	17.8	67.7	14.5
Vermont	2.62	14.18	2.74	19.54	1.77	2.44	13.4	72.6	14.0
Massachusetts	5.72	b 21.18	6.43	33.33	b 2.42	3.80	17.2	b 63.6	19.2
Rhode Island	11.19	20.24	6.90	38.33	2.10	3.96	29.2	52.8	18.0
Connecticut	6.40	16.92	5.48	28.89	1.86	3.16	22.5	58.6	18.9
New York	5.74	16.98	4.00	26.72	1.81	2.85	21.4	63.4	15.2
New Jersey (1892-93) ..	4.42	16.61	4.33	25.36	1.75	2.67	17.4	65.5	17.1
Pennsylvania	4.47	11.85	c 8.15	c 24.47	1.43	c 3.06	18.3	48.4	c 33.3
South Atlantic Division:									
Delaware (1889-90) a ..	d 1.21	11.46	1.33	13.99	1.38	1.07	d 8.7	81.8	9.5
Maryland	2.46	14.61	2.67	19.74	1.55	2.10	12.5	74.0	13.5
District of Columbia ..	3.05	20.77	5.86	29.68	2.26	3.22	10.3	70.0	19.7
Virginia	1.03	7.04	.89	8.96	1.18	1.49	11.5	78.6	9.9
West Virginia	2.13	7.21	2.57	11.91	1.44	2.38	17.9	60.5	21.6
North Carolina .....	.23	2.75	.42	3.40	.88	1.08	6.9	81.0	12.1
South Carolina .....	.27	2.76	.20	3.23	.64	.76	8.5	85.4	6.1
Georgia .....	.54	5.78	1.10	6.42	1.04	1.16	8.4	90.0	1.6
Florida	e 32	8.32	1.45	10.09	1.70	2.08	e 3.1	82.4	14.5
South Central Division:									
Kentucky	1.74	10.58	.03	12.35	1.76	2.06	14.1	85.7	.2
Tennessee (1892-93) ..	.56	4.05	.36	4.97	.94	1.16	11.3	81.3	7.4
Alabama	e 10	3.34	e .14	3.58	.92	e .98	e 2.7	93.3	e 4.0
Mississippi .....	.12	5.21	.61	5.94	.74	.84	2.1	87.6	10.3
Louisiana (1892-93) ..	.75	0.35	2.14	9.24	1.21	1.70	8.1	68.7	23.2
Texas .....	.77	7.24	.78	8.79	1.44	1.76	8.8	82.4	8.8
Arkansas	1.16	6.31	0	7.47	1.73	2.04	15.5	84.5	0
Oklahoma	b 6.60	b 4.89	b .47	11.96	b 1.27	3.09	b 56.6	b 40.0	b 3.4
North Central Division:									
Ohio	2.77	13.78	4.94	21.47	1.72	2.68	12.9	64.1	23.0
Indiana (1891-92)	2.48	10.64	2.44	15.56	1.61	2.36	16.0	68.4	15.6
Illinois	7.49	15.85	4.79	28.13	1.82	3.24	26.6	56.4	17.0
Michigan	2.96	13.59	4.35	20.90	1.88	2.88	14.2	65.0	20.8
Wisconsin	3.11	12.47	3.37	18.95	1.56	2.36	16.4	65.8	17.8
Minnesota	3.60	14.25	6.14	23.99	1.84	3.10	15.0	59.4	25.6
Iowa	3.05	14.96	5.65	23.66	1.90	3.00	12.9	63.2	23.9
Missouri	2.09	8.40	1.80	12.38	1.39	2.04	16.0	67.0	15.2
North Dakota	8.05	15.81	9.62	33.48	2.64	5.58	24.0	47.2	28.8
South Dakota	3.40	16.80	10.83	31.03	3.22	5.96	11.0	54.1	34.9
Nebraska	3.60	14.58	6.15	24.33	2.26	3.78	14.8	59.9	25.3
Kansas	1.58	12.15	3.87	17.60	1.94	2.82	9.0	60.1	21.9
Western Division:									
Montana	9.45	22.93	6.81	39.19	3.18	5.42	24.1	58.5	17.4
Wyoming	4.58	21.21	5.00	30.79	2.96	4.32	14.9	68.9	16.2
Colorado (1891-92) ..	13.76	20.55	7.03	41.34	2.74	5.51	33.3	49.7	17.0
New Mexico	1.00	6.09	1.08	8.12	1.44	1.92	12.3	75.0	12.7
Arizona (1892-93)	6.14	20.22	4.95	31.31	2.07	3.21	19.6	64.6	15.8
Utah	9.45	12.81	1.93	24.19	1.68	3.18	39.1	52.9	8.0
Nevada	1.97	31.86	6.42	40.25	4.24	5.36	4.9	79.2	15.9
Idaho	3.96	12.73	4.92	21.61	2.32	3.94	18.3	58.9	22.8
Washington	6.42	12.88	6.84	26.14	2.52	5.10	24.5	49.3	26.2
Oregon	4.89	13.99	2.11	20.99	2.56	3.86	23.3	66.6	10.1
California	4.05	24.33	4.57	32.95	3.06	4.14	12.3	73.8	13.9

a Includes janitors' services.

b Approximately.

c Includes bonds paid.

d In city of Wilmington only.

e Report incomplete.

II.—CITY SCHOOL SYSTEMS.

[See Part III of this report for the school statistics of individual cities.]

The most conspicuous of the facts brought out by the following tables is the relatively reduced expenditure for city schools during the year covered by this report.

In view of the stringency of the times, this was to be expected. Retrenchment has been the rule in all lines, and the schools have been no exception. It is rather a matter of congratulation that they have fared so well, for in the cities of only a few States has there been an actual decrease, and in the country at large the increase in expenditure in cities has been 5.92 per cent upon the same basis which shows an increase in enrollment of 8.68 per cent and in average attendance of 10.37 per cent. The total cost of the city schools per capita of average attendance has been \$30.64 in 1893-94, or a reduction of \$1.28 from that of 1892-93.

It is worthy of note that instances have been rare in the cities of actual decrease in the salaries paid to individual teachers. Necessary retrenchment has been as a rule secured by postponing the erection of new buildings, by increasing the number of pupils allotted to each teacher, and by curtailing the expense for all incidentals that could be spared without serious detriment to the schools. Thus it happens that the average amount paid to supervisors and teachers was substantially the same in 1893-94 as in 1892-93, being about \$614 in both years, and that the expense for teaching and supervision has increased in a much greater ratio than the total expenditure.

The States in which there has been an actual falling off in the total amount spent for schools in the cities are Tennessee, Mississippi, Arkansas, Wisconsin, Missouri, South Dakota, Nebraska, Colorado, Utah, Washington, and California. In only three of these, namely, Tennessee, Arkansas, and Missouri, has there been a similar reduction in the amounts paid for tuition.

In the consideration of the statistics of cities the fact should not be overlooked that the list of places which are represented in such tables is constantly increasing as communities reach the minimum limit of population prescribed for classification as "cities." The limit of 8,000 inhabitants followed by this office is an arbitrary one and differs from that recognized by the laws of some of the States. But its adoption was based upon reasonable assumptions, and since uniformity of practice is, after all, the most essential consideration, and other statistical bureaus have adopted the same rule, its use by this office has been entirely satisfactory.

It is impossible to determine accurately every year just what communities have reached the required numbers, and it necessarily follows that the annual revision of the list is attended with perplexities and doubts. The collection of school statistics of cities and villages of

between 4,000 and 8,000 inhabitants was begun for this report, and a means is thereby obtained of determining with a fair degree of certainty just what additions should be made to the list of cities. Eighty-one new communities appeared from their school statistics to be worthy of rank among the cities of 8,000 inhabitants, and their statistics were accordingly incorporated in the city table. This number (81) was much greater than the number of new cities in the report of 1892-93, and in this fact must be found the explanation of the increase in enrollment of 8.68 per cent for the last year as against 4.86 per cent for 1892-93. These two quantities are not comparable with each other, but are to be used only in comparison with other ratios for the same years.

One of the effects of the infusion of a greater proportion of small cities into the list is to be seen in the heavy increase in the number of schoolhouses and the smaller average size of each. Small houses are necessities for scattered settlements, in order that the schools may be sufficiently accessible to the pupils. As the territory fills up the small buildings are gradually replaced by larger ones, the small houses being demolished or sold; thus it happens that cities of 8,000 inhabitants have usually as many schoolhouses as cities three or four times their size.

To the introduction of 81 new small cities, therefore, must be ascribed a great part of the increase of 786 in the number of buildings. Six of the new places added to the list in Massachusetts alone have 108 schoolhouses. Nevertheless there are several instances in which larger cities have made extensive additions to the number of their buildings. Buffalo, N. Y., reports 21 more than last year and Brooklyn 30 more.

The increase of 7.58 per cent in the value of school property appears anomalous in view of the reduced expenditures for such purposes and of the general stagnation in business which has checked the normally steady increase in the value of city real estate. The only explanation is to be found in the supposition that the increase mentioned is the result of the unusually heavy expenditures for buildings during 1892-93.

The following notable differences appear in the valuation of school property as reported in the years 1892-93 and 1893-94: New York, increase, \$1,485,221; Chicago, increase, \$2,143,000; Cincinnati, increase, \$2,000,000.

The increase of 480, or 16.58 per cent, in the number of supervising officers during the year is remarkable. The following table shows that the greater part of the increase comes from a few cities:

City.	Supervising officers reported in—		Increase.	City.	Supervising officers reported in—		Increase.
	1892-93.	1893-94.			1892-93.	1893-94.	
St. Louis, Mo.	60	122	62	Milwaukee, Wis.	39	45	6
Detroit, Mich.	9	47	38	Cleveland, Ohio.	13	48	35
Grand Rapids, Mich.	7	27	20	Buffalo, N. Y.	55	132	77
Chicago, Ill.	210	238	28	Philadelphia, Pa.	76	86	10
St. Paul, Minn.	8	41	33	Waterbury, Conn.	5	17	12
La Crosse, Wis.	2	10	8				

It is gratifying to note that the average length of the school term for all the cities shows an increase of 1.3 days over last year. For the previous three years there had been a steady diminution in this respect, and this evidence that the apparent tendency toward an unnecessarily short school year has been checked must be regarded as encouraging.

TABLE 1.—*Summary of statistics of school systems of cities containing over 8,000 inhabitants, showing increase from previous year.*

[NOTE.—No correct list of cities of a given population can be made in other than census years. The percentages of increase shown below, therefore, are relative only, and are intended to be used for no other purpose than comparison with each other.]

	1892-93.	1893-94.	Increase.	Per cent of increase.
Enrollment.....	2, 876, 866	3, 126, 659	249, 793	8.66
Aggregate days attendance of pupils.....	394, 017, 038	437, 585, 317	43, 568, 279	11.06
Average daily attendance.....	2, 066, 850	2, 281, 237	214, 387	10.37
Average length (in days) of school term.....	190.6	191.9	1.3	.....
Enrollment in private and parochial schools (estimated).....	775, 910	820, 250	44, 340	5.72
Supervising officers.....	2, 894	3, 374	480	16.58
Teachers.....	58, 522	62, 999	4, 477	7.65
Buildings.....	6, 957	7, 743	786	11.30
Sittings or seats.....	2, 693, 522	2, 896, 295	204, 773	7.58
Value of school property.....	\$205, 338, 077	\$228, 439, 334	\$23, 101, 257	7.58
Expenditure for teaching and supervision.....	\$37, 717, 838	\$40, 717, 650	\$2, 999, 812	7.95
Expenditure for all purposes, excepting loans and bonds.....	\$65, 981, 388	\$69, 886, 413	\$3, 905, 025	5.92

TABLE 2.—Summary, by States, of enrollment, attendance, supervising officers, and teachers in cities containing over 8,000 inhabitants. (a)

Cities of—	Number of school systems.	Enrollment in public day schools.	Aggregate number of days' attendance of all pupils.	Average daily attendance.	Enrollment in private and parochial schools.	Number of supervising officers.	No. of teachers.		
							Male.	Female.	Total.
1	2	3	4	5	6	7	8	9	10
United States	554	8, 126, 659	497, 585, 317	2, 281, 237	820, 250	2, 374	4, 753	58, 246	62, 980
North Atlantic Division	219	1, 492, 594	269, 650, 142	1, 075, 938	379, 402	1, 516	1, 984	27, 782	29, 786
North Atlantic Division	40	224, 400	30, 078, 691	169, 571	52, 069	190	479	3, 880	4, 459
South Central Division	48	171, 386	23, 016, 274	127, 585	48, 730	173	390	3, 036	3, 416
North Central Division	213	1, 068, 556	150, 775, 296	795, 130	315, 166	1, 268	1, 551	20, 269	21, 920
Western Division	34	171, 723	24, 064, 913	122, 019	24, 881	227	353	3, 065	3, 438
North Atlantic Division:									
Maine	9	21, 467	3, 041, 919	16, 949	4, 417	25	38	551	589
New Hampshire	5	12, 712	1, 566, 080	8, 764	6, 736	21	17	225	302
Vermont	2	4, 236	487, 107	2, 792	1, 850	4	7	89	96
Massachusetts	48	267, 459	40, 582, 605	209, 177	49, 079	210	523	5, 568	6, 091
Rhode Island	7	43, 206	5, 152, 654	26, 964	9, 930	22	63	811	874
Connecticut	16	67, 260	9, 240, 229	48, 263	14, 981	102	121	1, 335	1, 456
New York	80	586, 366	83, 402, 277	419, 430	169, 167	728	610	10, 635	11, 245
New Jersey	22	120, 738	17, 755, 887	88, 206	36, 383	167	72	2, 226	2, 298
Pennsylvania	50	355, 946	48, 441, 874	256, 400	86, 865	236	533	6, 282	6, 815
South Atlantic Division:									
Delaware	1	9, 799	1, 358, 532	7, 188		2	6	200	206
Maryland	4	74, 452	9, 795, 338	49, 283	20, 175	28	147	1, 397	1, 544
District of Columbia	2	40, 678	5, 727, 361	31, 127	6, 000	48	100	796	896
Virginia	10	31, 794	4, 248, 841	23, 439	9, 246	31	92	467	559
West Virginia	6	9, 821	1, 324, 837	7, 062	1, 400	12	17	196	213
North Carolina	6								
South Carolina	4	9, 787	1, 440, 959	7, 786	2, 650	17	22	152	174
Georgia	7	31, 561	4, 184, 663	23, 220		40	54	506	560
Florida	3								
South Central Division:									
Kentucky	11	47, 531	6, 550, 821	33, 880	12, 466	58	64	876	940
Tennessee	6	28, 221	3, 897, 285	21, 279	4, 296	30	87	430	517
Alabama	6	12, 916	1, 676, 639	9, 753			47	236	283
Mississippi	3	5, 534		3, 896			7	111	118
Louisiana	3								
Texas	14	40, 074	5, 000, 852	29, 365	6, 259	40	135	673	808
Arkansas	4	11, 069	1, 399, 439	7, 974	1, 680	10	21	151	172
Oklahoma	1	1, 301	113, 200	740	300		2	23	25
Indian Territory	0	0	0	0	0	0	0	0	0
North Central Division:									
Ohio	42	208, 662	31, 401, 862	164, 353	66, 959	186	383	4, 066	4, 449
Indiana	26	83, 196	10, 977, 137	60, 096	24, 161	82	195	1, 512	1, 707
Illinois	34	264, 512	39, 310, 969	209, 223	88, 796	337	275	5, 018	5, 293
Michigan	28	108, 982	15, 336, 755	79, 098	31, 598	128	117	2, 119	2, 236
Wisconsin	20	81, 794	11, 042, 216	50, 300	32, 134	99	116	1, 564	1, 620
Minnesota	7	63, 703	9, 030, 544	48, 151	15, 590	118	65	1, 350	1, 415
Iowa	21	61, 606	8, 335, 053	45, 575	12, 562	101	75	1, 323	1, 398
Missouri	11	115, 473	15, 069, 933	81, 720	31, 135	147	181	2, 084	2, 265
North Dakota	0	0	0	0	0	0	0	0	0
South Dakota	1	1, 845	245, 576	1, 401	120	2	3	41	44
Nebraska	10	37, 676	4, 892, 135	26, 088	6, 072	48	46	715	761
Kansas	13	39, 297	5, 108, 115	28, 615	6, 117	18	96	637	732
Western Division:									
Montana	2	5, 703	716, 728	4, 180	662		11	113	124
Wyoming	1	1, 157	154, 898	866	75	2	0	27	27
Colorado	8	28, 103	3, 519, 357	19, 282	3, 065	45	64	489	553
New Mexico	0	0	0	0	0	0	0	0	0
Arizona	0	0	0	0	0	0	0	0	0
Utah	2	13, 538	1, 857, 169	9, 928		6	33	210	243
Nevada	1								
Idaho	0	0	0	0	0	0	0	0	0
Washington	4	16, 892	2, 350, 825	12, 199	2, 056	25	21	306	327
Oregon	2	11, 686	1, 732, 969	9, 216	1, 017	11	28	226	254
California	14	93, 089	13, 501, 167	65, 153	14, 959	131	193	1, 687	1, 890

a In the preparation of this table omissions and deficiencies in the returns of individual cities were supplied from the best sources available. If no accurate information could be had in any particular case, an estimate based upon the ratios developed in the other cities of the same State was used unless it appeared that the conditions were essentially different in the city for which precise data were lacking.

Blanks indicate that the number of cities which reported the item was not sufficient to justify an estimate to supply the deficiency.

TABLE 3.—*Summary, by States, of school property and expenditures in cities containing over 8,000 inhabitants. (a)*

Cities of—	Number of build-ings.	Number of seats or sittings for study.	Value of all public prop-erty used for school pur-poses.	Expendi-ture for supervision and teach-ing.	Expendi-ture for all purposes except loans and bonds.
1	2	3	4	5	6
United States	7,743	2,898,295	\$228,439,384	\$40,717,650	\$60,886,413
North Atlantic Division	3,683	1,376,385	111,843,026	19,293,607	33,806,973
South Atlantic Division	491	209,363	11,055,115	2,574,429	3,643,457
South Central Division	436	149,876	9,144,329	1,950,857	2,866,737
North Central Division	2,635	1,014,673	77,961,101	13,962,787	25,399,773
Western Division	498	147,996	18,435,763	2,935,970	4,609,473
North Atlantic Division:					
Maine	196	25,249	1,847,383	258,154	447,466
New Hampshire	80	13,207	1,523,851	172,413	260,087
Vermont	16	8,190	236,000	45,486	87,879
Massachusetts	1,126	271,710	27,373,088	4,303,963	7,068,415
Rhode Island	185	87,507	3,212,839	540,530	1,190,867
Connecticut	235	62,188	5,662,518	896,342	1,533,475
New York	804	534,035	42,484,613	7,575,063	12,723,000
New Jersey	231	108,718	6,223,690	1,364,737	2,229,877
Pennsylvania	810	320,581	23,779,044	4,136,919	7,745,907
South Atlantic Division:					
Delaware	27	10,054	622,797	101,459	166,080
Maryland	129	72,975	3,181,753	845,332	1,176,192
District of Columbia	100	34,616	3,400,000	648,575	936,933
Virginia	69	28,220	983,240	271,566	351,652
West Virginia	24	9,050	567,145	97,578	189,832
North Carolina					
South Carolina	19	9,150	226,150	82,624	113,092
Georgia	71	28,280	1,434,430	368,538	480,073
Florida					
South Central Division:					
Kentucky	103	40,776	2,365,175	597,226	897,039
Tennessee	52	22,624	1,238,637	280,606	407,904
Alabama	42		633,500	158,094	192,827
Mississippi	9		217,500	45,322	54,823
Louisiana					
Texas	126	37,690	2,774,567	471,049	756,802
Arkansas	30	9,047	618,150	100,396	150,920
Oklahoma	13	866	3,500	15,025	23,943
Indian Territory	0	0	0	0	0
North Central Division:					
Ohio	498	213,850	18,276,920	2,864,899	5,097,060
Indiana	240	77,166	5,439,085	966,856	1,480,663
Illinois	508	256,646	19,280,221	3,972,938	8,110,000
Michigan	296	101,617	7,072,463	1,272,178	2,121,096
Wisconsin	224	76,750	4,847,565	981,611	1,548,374
Minnesota	147	54,959	6,882,474	1,001,855	1,710,227
Iowa	211	58,619	4,462,700	769,331	1,395,707
Missouri	246	103,398	6,760,373	1,241,248	2,397,278
North Dakota	0	0	0	0	0
South Dakota	10	1,672	255,000	23,230	44,026
Nebraska	123	32,135	2,620,000	482,228	844,619
Kansas	132	37,961	2,064,300	386,413	650,103
Western Division:					
Montana	25		900,000	93,660	200,372
Wyoming	5	1,000	134,641	22,309	32,396
Colorado	77	25,722	4,189,500	467,443	915,367
New Mexico	0	0	0	0	0
Arizona	0	0	0	0	0
Utah	51	3,300	1,795,478	178,303	434,707
Nevada					
Idaho	0	0	0	0	0
Washington	50	17,856	2,006,594	299,718	599,248
Oregon	40	10,148	874,414	212,858	353,661
California	214	82,716	8,494,561	1,643,839	2,069,526

a In the preparation of this table omissions and deficiencies in the returns of individual cities were supplied from the best sources available. If no accurate information could be had in any particular case, an estimate based upon the ratios developed in the other cities of the same State was used unless it appeared that the conditions were essentially different in the city for which precise data were lacking.

Blanks indicate that the number of cities which reported the item was not sufficient to justify an estimate to supply the deficiency.

TABLE 4.—Comparative statistics of cities containing over 8,000 inhabitants, summarized by geographical divisions.

Cities of—	1	2	3	4	5	6	7	8	9	10	11	12	13	14
		Ratio of private school enrollment to total public enrollment.	Ratio of average attendance to total enrollment (public schools).	Average number of days' attendance of each pupil enrolled.	Average length of school term.	Average number of pupils in attendance to each teacher.	Average number of teachers to each supervising officer.	Average number of seats for each 100 pupils in attendance.	Average number of seats or sittings to a building.	Value of school property per capita of pupils in average attendance.	Cost of tuition (i. e., super- vision and teaching) per capita of pupils in average attendance.	Total cost of schools per capita of pupils in average attendance.	Average cost per day of tuition for one pupil.	Average daily expenditure per pupil for all purposes.
United States:		Per cent.	Per cent.	Days.	Days.								Cents.	Cents.
1801-02.....	21.0	71.1	72.1	138.5	104.7	35.0	20.2	126.5	371	\$97.92	\$16.83	\$28.90	8.70	15.04
1802-03.....	20.7	71.2	72.1	138.0	103.7	34.5	20.2	131.2	368	105.15	18.29	31.92	9.60	16.75
1803-04.....	20.3	72.1	72.1	140.4	104.8	36.1	18.8	127.9	374	103.96	17.93	30.96	9.20	15.89
North Atlantic Division:														
1801-02.....	17.8	72.0	72.0	137.3	100.7	37.3	28.9	121.9	407	58.37	14.79	23.08	7.75	12.10
1802-03.....	18.6	70.7	70.7	131.7	108.3	35.4	26.3	123.1	457	64.90	16.14	22.45	8.46	12.05
1803-04.....	18.6	71.6	71.6	134.0	107.3	36.0	23.5	130.4	426	66.88	16.03	22.68	8.55	12.12
South Atlantic Division:														
1801-02.....	24.4	70.7	70.7	131.2	105.5	38.5	16.4	112.2	324	72.01	15.30	21.50	8.25	11.58
1802-03.....	22.5	72.7	72.7	133.9	104.2	36.6	22.4	126.0	379	66.73	15.81	21.62	8.58	11.74
1803-04.....	21.1	74.4	74.4	134.3	106.4	37.3	19.7	117.6	344	71.67	15.65	22.48	8.48	12.48
North Central Division:														
1801-02.....	23.8	74.0	74.0	138.5	107.2	36.4	19.3	127.4	368	96.50	17.63	30.21	9.40	16.14
1802-03.....	23.6	73.2	73.2	137.8	108.4	35.9	19.8	130.4	368	95.54	17.95	32.73	9.53	17.37
1803-04.....	22.8	74.6	74.6	141.4	109.6	36.3	17.3	127.6	385	98.06	17.56	31.93	9.26	16.85
Western Division:														
1801-02.....	13.9	70.7	70.7	137.1	104.1	36.9	13.8	124.8	312	154.00	23.87	44.82	12.30	22.95
1802-03.....	13.3	69.9	69.9	135.5	101.1	35.9	13.8	123.4	297	156.23	24.05	48.16	12.50	25.21
1803-04.....	12.7	71.1	71.1	140.1	107.1	35.5	15.1	121.3	297	151.07	24.07	38.26	12.20	19.40

TABLE 5.—*Comparison of the school enrollment of the several ages with the population of like ages in certain cities (statistics of 1890).*

Cities.	5 years of age.			6 years of age.			7 years of age.		
	Pupils in school.	Children in the city.	Per cent in school.	Pupils in school.	Children in the city.	Per cent in school.	Pupils in school.	Children in the city.	Per cent in school.
Baltimore, Md.	932	9,368	9.9	4,484	9,409	47.6	5,802	9,164	63.3
Boston, Mass.	2,020	8,008	25.2	4,289	7,241	59.2	5,368	7,179	74.8
Minneapolis, Minn.		3,528		2,428	3,350	72.5	2,254	3,060	73.4
St. Louis, Mo.		9,979		8,067	10,015	80.5	8,424	9,503	88.7
Omaha, Nebr.	1,201	3,605	33.3	1,616	3,079	52.5	1,510	2,992	50.5
Newark, N. J.	1,121	4,169	27.3	3,116	4,638	77.1	3,137	3,969	78.8
Brooklyn, N. Y.	2,494	17,296	14.4	7,764	17,034	45.6	9,326	16,277	56.7
Syracuse, N. Y.	715	1,835	39.0	1,302	1,762	74.0	1,208	1,734	73.5
Cincinnati, Ohio		6,074		5,757	6,282	91.6	4,516	6,277	71.9
Richmond, Va.	59	1,576	3.7	441	1,571	28.1	898	1,676	53.6
Total	28,542	245,797	18.6	89,254	63,781	61.5	42,493	61,830	68.7

Cities.	8 years of age.			9 years of age.			10 years of age.		
	Pupils in school.	Children in the city.	Per cent in school.	Pupils in school.	Children in the city.	Per cent in school.	Pupils in school.	Children in the city.	Per cent in school.
Baltimore, Md.	6,106	8,962	68.6	6,414	2,579	77.1	6,403	8,763	73.1
Boston, Mass.	5,709	7,158	79.7	5,777	6,993	82.2	5,983	7,361	81.3
Minneapolis, Minn.	2,231	2,728	81.8	2,060	2,534	82.2	2,052	2,490	82.4
St. Louis, Mo.	7,427	9,237	78.3	6,811	8,567	79.6	6,097	9,087	67.1
Omaha, Nebr.	1,400	2,739	51.1	1,287	2,527	50.8	1,230	2,646	46.4
Newark, N. J.	2,946	3,719	79.2	2,731	3,527	77.4	2,872	3,671	78.2
Brooklyn, N. Y.	9,926	15,806	62.8	10,312	14,848	69.4	10,742	15,915	67.5
Syracuse, N. Y.	1,332	1,591	83.8	1,319	1,602	82.4	1,374	1,629	84.3
Cincinnati, Ohio	4,565	5,832	78.3	4,473	5,732	78.0	4,292	6,028	71.1
Richmond, Va.	1,216	1,514	80.3	1,283	1,597	80.3	1,459	1,731	84.3
Total	42,758	59,226	72.2	42,487	56,493	75.2	42,504	59,321	71.6

Cities.	11 years of age.			12 years of age.			13 years of age.		
	Pupils in school.	Children in the city.	Per cent in school.	Pupils in school.	Children in the city.	Per cent in school.	Pupils in school.	Children in the city.	Per cent in school.
Baltimore, Md.	5,443	7,641	71.2	5,277	8,681	60.9	4,130	7,981	51.7
Boston, Mass.	5,758	6,647	86.6	5,754	7,555	76.2	5,405	7,004	77.2
Minneapolis, Minn.	1,980	2,240	88.9	1,933	2,480	77.9	1,764	2,281	77.4
St. Louis, Mo.	5,098	8,067	70.4	5,301	9,307	56.9	4,214	8,786	48.0
Omaha, Nebr.	1,151	2,089	55.1	1,145	2,425	47.2	984	2,157	45.6
Newark, N. J.	2,589	3,320	78.0	2,534	3,549	71.7	1,850	3,240	57.1
Brooklyn, N. Y.	9,857	14,068	70.1	9,384	15,713	59.7	7,318	13,932	52.5
Syracuse, N. Y.	1,338	1,536	87.1	1,314	1,653	79.6	1,203	1,569	76.2
Cincinnati, Ohio	3,879	5,508	70.4	3,427	6,008	56.7	2,516	5,553	45.3
Richmond, Va.	1,365	1,491	91.6	1,448	1,847	78.0	1,261	1,725	73.1
Total	39,058	52,627	74.2	37,517	59,218	63.3	30,645	54,330	56.4

a Excluding Minneapolis, St. Louis, and Cincinnati.

TABLE 5.—*Comparison of the school enrollment of the several ages with the population of like ages in certain cities (statistics of 1890)*—Continued.

Cities.	14 years of age.			15 years of age.			16 years of age.		
	Pupils in school.	Children in the city.	Per cent in school.	Pupils in school.	Children in the city.	Per cent in school.	Pupils in school.	Children in the city.	Per cent in school.
Baltimore, Md.	2,939	8,497	34.6	1,603	7,825	20.5	855	8,909	9.6
Boston, Mass.	4,323	7,676	56.3	3,079	7,220	42.6	1,821	7,884	23.1
Minneapolis, Minn.	1,491	2,410	61.8	966	2,275	43.3	613	2,608	23.4
St. Louis, Mo.	2,944	9,873	31.4	1,587	8,952	17.7	a 1,853	9,530	.....
Omaha, Nebr.	760	2,826	32.6	481	2,148	22.4	268	2,437	11.1
Newark, N. J.	1,118	3,779	29.6	598	3,434	17.4	304	8,794	8.0
Brooklyn, N. Y.	4,823	15,903	30.3	2,459	14,420	17.0	1,186	16,443	7.2
Syracuse, N. Y.	994	1,747	56.8	587	1,608	36.5	339	1,697	19.9
Cincinnati, Ohio.	1,608	6,470	24.8	782	5,684	13.8	440	6,195	7.1
Richmond, Va.	964	1,759	54.8	709	1,592	44.5	371	1,858	20.0
Total	21,964	59,940	36.6	12,871	55,158	23.3	b 6,197	651,825	12.0

Cities.	17 years of age.			18 years of age.			19 years of age.		
	Pupils in school.	Children in the city.	Per cent in school.	Pupils in school.	Children in the city.	Per cent in school.	Pupils in school.	Children in the city.	Per cent in school.
Baltimore, Md.	346	8,528	4.1	128	9,523	1.3	34	8,821	.4
Boston, Mass.	954	7,587	12.6	440	8,551	5.1	c 215	8,609	.....
Minneapolis, Minn.	403	2,539	15.8	167	3,151	5.3	90	3,167	2.8
St. Louis, Mo.	.....	8,689	.....	.....	9,997	.....	.....	9,609	.....
Omaha, Nebr.	136	2,322	5.8	72	2,932	2.4	24	3,112	.8
Newark, N. J.	137	3,488	3.9	d 94	3,859	.....	.....	3,508	.....
Brooklyn, N. Y.	476	15,498	3.1	192	16,804	1.1	72	15,385	.5
Syracuse, N. Y.	172	1,741	9.9	80	1,910	4.2	40	1,761	2.3
Cincinnati, Ohio.	245	5,729	4.3	103	6,755	1.5	40	6,156	.7
Richmond, Va.	193	1,760	10.9	56	2,008	2.8	21	1,774	1.2
Total	b 3,063	b 49,201	6.2	e 1,236	e 51,634	2.4	f 321	f 40,176	.8

Cities.	20 years of age.			21 years of age.		
	Pupils in school.	Children in the city.	Per cent in school.	Pupils in school.	Children in the city.	Per cent in school.
Baltimore, Md.	5	9,425	.05	.....	.....	.....
Boston, Mass.	.....	9,897	.....	.....	.....	.....
Minneapolis, Minn.	62	3,819	1.6	g 58	.....	.....
St. Louis, Mo.	.....	10,685	.....	.....	.....	.....
Omaha, Nebr.	9	3,843	.2	g 5	.....	.....
Newark, N. J.	.....	3,880	.....	.....	.....	.....
Brooklyn, N. Y.	24	17,061	.1	.....	.....	.....
Syracuse, N. Y.	24	1,933	1.2	.....	.....	.....
Cincinnati, Ohio.	9	6,229	.1	7	.....	.....
Richmond, Va.	1	2,087	.05	.....	.....	.....
Total	f 134	f 44,997	.3	.....	.....	.....

a 16 years and over.

b Excluding St. Louis.

c 19 years and over.

d 18 years and over.

e Excluding St. Louis and Newark.

f Excluding St. Louis, Newark, and Boston.

g 21 years and over.

TABLE 6.—Statistical comparison of the schools of the ten largest cities of the United States.

City.	Ages of children enumerated.	School census taken nearest to June, 1893.	Population between the ages of 5 and 21 (estimated).	Pupils in private and parochial schools (superintendent's estimate).	Enrollment in public day schools.	Average daily attendance.	Number of supervising officers.	Number of teachers.	Number of buildings.
1	2	3	4	5	6	7	8	9	10
New York, N. Y.	5-21	486,000	486,000	69,500	227,932	167,634	234	4,131	143
Chicago, Ill.	6-21	403,066	433,700	68,694	185,358	139,333	238	3,655	269
Philadelphia, Pa.	5-21	296,000	290,000	41,000	146,406	97,076	86	2,902	288
Brooklyn, N. Y.	5-21	296,000	290,000	34,000	146,406	97,076	196	2,292	124
St. Louis, Mo.	6-20	162,878	184,700	25,000	68,839	49,591	122	1,412	120
Boston, Mass.	5-15	70,139	123,200	11,294	74,328	57,741	28	1,415	198
Baltimore, Md.	6-21	110,731	119,100	19,000	69,425	45,846	36	1,440	112
San Francisco, Cal.	5-17	68,390	92,400	8,973	44,349	29,718	60	862	81
Cincinnati, Ohio.	6-21	85,666	92,000	17,717	38,537	30,639	41	704	58
Cleveland, Ohio.	6-21	87,887	94,400	17,950	44,002	33,405	48	903	52

City.	Capacity of buildings (i. e., number of seats for study).	Value of property used for school purposes.	Expenditure for tuition (i. e., for salaries of teachers and supervising officers).	Total expenditure (excluding repayment of loans, etc.).	Number of children between 5 and 21 not in school, either public or private.	Proportion of same to population between 5 and 21.	Proportion of public school enrollment to population between 5 and 21.	Proportion of average attendance to—
1	11	12	13	14	15	16	17	18
New York, N. Y.	222,491	\$20,695,854	\$2,956,343	\$5,633,353	188,568	P. ct. 38.8	P. ct. 46.9	P. ct. 34.5
Chicago, Ill.	162,127	13,843,000	3,034,255	6,466,995	179,648	41.4	42.7	73.9
Philadelphia, Pa.	130,556	9,801,939	2,062,625	3,461,183	115,594	39.0	49.5	66.3
Brooklyn, N. Y.	109,903	7,953,230	1,895,102	2,686,270	90,861	49.3	37.3	72.0
St. Louis, Mo.	58,190	3,950,000	733,942	1,490,908	37,578	30.5	30.3	77.7
Boston, Mass.	70,053	10,000,000	1,441,568	2,290,967	30,675	25.8	58.3	66.0
Baltimore, Md.	68,025	3,008,253	803,447	1,121,033	39,078	42.3	48.0	67.0
San Francisco, Cal.	39,526	5,063,363	814,110	989,000	35,746	38.9	41.9	79.5
Cincinnati, Ohio.	89,338	4,000,000	650,681	980,027	32,448	34.4	46.6	75.9
Cleveland, Ohio.	45,000		634,534	1,175,663				

City.	Each teacher.	Each building.	Average seating capacity of a building.	Average annual salary of teachers and supervisors.	Value of school property per capita of—	Expense for tuition per capita of—	Total expenditure per capita of—
1	20	21	22	23	24	25	26
New York, N. Y.	40.6	1,172	1,556	\$677	\$42.00	\$123.50	\$6.08
Chicago, Ill.	38.1	518	603	780	30.91	99.35	7.00
Philadelphia, Pa.	42.4	783	453	679	26.98	81.94	19.54
Brooklyn, N. Y.	42.4	783	453	762	21.39	79.66	14.80
St. Louis, Mo.	35.1	413	485	478	81.18	173.20	24.97
Boston, Mass.	40.8	262	354	1,000	25.25	65.50	17.52
Baltimore, Md.	31.8	410	607	548	54.80	170.37	27.20
San Francisco, Cal.	34.5	367	488	883	43.48	130.57	21.23
Cincinnati, Ohio.	40.1	528	678	808			19.00
Cleveland, Ohio.	37.0	642	805	667			12.45

CHAPTER III.

STATISTICAL REVIEW OF SECONDARY EDUCATION.

More than half the space devoted to detail tables in Part IV of this report is surrendered to secondary schools. Of the 8,364 educational institutions mentioned by name in the two volumes, 5,946 are schools of secondary grade, viz, 3,964 public high schools and 1,982 private high schools and academies. In these 5,946 high schools there were 407,919 students pursuing secondary studies in 1894. In the same schools there were 677,933 pupils in elementary grades. In Part IV will be found the two tables giving the statistics of each school in detail. The following table is a review of the statistics of public and private high schools for the past five years, summarized for each year:

Year reported.	Public.			Private.			Total.		
	Schools.	Teachers.	Students.	Schools.	Teachers.	Students.	Schools.	Teachers.	Students.
1889-90	2,526	9,120	202,963	1,632	7,209	94,931	4,158	16,329	297,894
1890-91	2,771	8,270	211,596	1,714	6,231	98,400	4,485	14,501	309,996
1891-92	3,035	9,564	239,556	1,550	7,093	100,739	4,585	16,657	340,295
1892-93	2,812	9,489	232,651	1,434	6,261	96,147	4,246	15,750	328,798
1893-94	3,964	12,120	289,274	1,982	8,009	118,645	5,946	20,129	407,919

The sudden increase from 4,246 secondary schools and 329,098 students in 1893 to 5,946 schools and 407,919 students in 1894 should be explained. It was known that several hundred high schools, both public and private, had never reported to this office. Many of these were comparatively new schools. Some had grown up out of elementary schools and the development of village into city systems, but most of them were independent high schools established within the last five years.

For several months during the spring and summer of 1894 the statistician of the Bureau was busy collecting lists of public and private

secondary schools from all the States. Circular letters were addressed to all county and city superintendents of public instruction and to the officials of schools already on the lists in this office, asking for information concerning new schools. The result was that more than 10,000 schools, public and private, were reported to this office as high schools, including those already known to the Bureau. Blank forms for statistical information were sent to these schools. More than 2,000 of those addressed were never heard from, and it was concluded that most of these were elementary schools. Nearly 2,000 of the schools reporting were found to be below the secondary grade. Many of these were high schools in name, but had no students pursuing high school studies. Some had students in only one study which could be classed as secondary and many others were elementary schools, reporting two or three or more students in high school studies, but giving no evidence that they were organized as secondary schools or making efforts to reach a high school standard.

After throwing out the reports of all schools which should be classed as elementary the result of the investigation was the addition of 1,700 to the list of secondary schools over the number reporting the previous year. This was an increase of 1,152 in the number of public high schools and 548 added to the number of private high schools. The increase in the number of secondary students was 78,821. Of this increase 56,323 were in the public high schools and 22,498 in the private schools and academies.

In 1893-94—that is, for the school year beginning in the fall of 1893 and ending in June, 1894—the average number of secondary students to each high school was 69; in 1892-93 the average number was 77; in 1891-92 the number was 74; in 1890-91 it was 69; and in 1889-90 the average number to a school was 71. The fluctuation in these averages is largely due to the manner in which many principals made their reports, in many instances elementary pupils being classed as secondary students. The large difference between the average numbers for 1892-93 and 1893-94 can be easily explained. There was possibly a slight falling off in the attendance in some sections of the country. Many of the new schools had fewer students than the average of the old schools, but the apparent falling off is chiefly due to a more rigid classification of students.

It was supposed that the addition of so many new schools to the lists would lower the average standing, but such has not been the result. The decrease in the average number of secondary students accredited to a school has doubtless contributed to raise the standing of the average school. It is easily shown that the 5,946 schools reporting in 1894 rank higher than the 4,246 reporting in 1893, when the percentages of graduates and the percentages pursuing high school studies are compared. The following tables, comparing percentage figures for the two years in public and private schools and for the two

classes of schools combined, will show that there was decided improvement in the schools of 1894 over the schools of 1893:

Percentage of students pursuing certain studies.

	Latin.	Greek.	French.	German.	Algebra.	Geometry.	Trigonometry.	Physics.	Chemistry.	History.
1893.										
Public.....	43.06	3.40	6.62	11.92	52.88	26	2.73	23.27	10	33.63
Private.....	39.23	8.61	18.47	15.63	42.75	20.37	5.76	19.76	9.94	32.46
Both.....	41.94	4.92	9.94	13	49.92	24.36	3.61	22.25	9.96	33.46
1894.										
Public.....	44.78	3.33	6.81	11.77	56.14	27.20	2.93	25.29	10.31	36.43
Private.....	40.77	9.04	18.85	15.25	44.37	20.54	5.98	20.91	10.32	34.07
Both.....	43.59	4.99	10.31	12.78	52.71	25.25	3.90	24.02	10.31	35.73

The above figures show the percentages for 1893 and for 1894 of students in each of the ten leading high school studies. The per cent studying Latin increased from 43.06 to 44.78 in the public high schools and from 39.23 to 40.77 in the private schools, which was an increase from 41.94 to 43.59 for public and private high schools combined. The per cent studying algebra increased from 52.88 to 56.14 in the public schools and from 42.75 to 44.37 in the private schools, the increase for public and private schools combined being from 49.92 in 1893 to 52.71 in 1894. There was a barely perceptible decrease in the per cent studying Greek in the public high schools, more than counterbalanced by an increase in the private schools. There was the falling off of less than one-quarter of 1 per cent in the percentage of students in German. In all the other studies the percentages for 1894 stand considerably higher than the corresponding figures for 1893. The per cent of graduates was also greater in 1894 than the previous year. In the public schools the per cent of graduates increased from 12.62 in 1893 to 12.90 in 1894, and in the private schools the increase was from 8.65 to 9.40.

It may be interesting to note that the number of pupils in elementary studies in the public and private high schools is considerably greater than the aggregate number of secondary students in the same schools. In 1893-94 the number of elementary pupils in the 5,946 high schools was 677,933, or 114 to each school. In 1892-93 there were 501,035 elementary pupils in the 4,246 schools, or 118 to each school.

The line between the real and the so-called high school is each year becoming more distinct and the classification of students into elementary and secondary is more rigid. The methods of collecting information have been improved, and with the continued growth of high schools the statistics of secondary education show better results. Each year for twenty-three years the report from this Bureau has contained a chapter devoted to secondary schools. A brief survey of the results of this work may prove of interest.

A STATISTICAL REVIEW.

In 1871 the United States Commissioner of Education began to collect statistics of secondary schools. In the report for that year appears a list of 638 private high schools and academies. In these schools 80,227 students were receiving instruction. This number, doubtless, included all the pupils in the schools, those in the elementary branches as well as those pursuing secondary studies. The next annual report shows a list of 811 schools, with 98,929 students, for 1872. The 1873 report had a list of 944 schools, with 118,570 students. It is probable that in 1874 an attempt was made to exclude from the enumeration at least a portion of the elementary pupils, for while the number of schools reported for that year had increased to 1,031 the number of students was less by 20,000 than the previous year and some hundreds less than two years before. The number of students reported in the 1,031 schools for 1874 was 98,179. For 1875 the number of schools was 1,143 and the number of students 108,235.

The Bureau began collecting the statistics of city high schools in 1876. That year the report of the Commissioner of Education showed that there were 22,982 secondary students in the public schools of the 192 cities reporting. From 1876 to 1889 the annual reports contained statistics of public high schools in connection with city systems. During the same period the reports from private secondary schools were published annually. In 1884-85 the number of these schools reporting had reached 1,617, with 160,137 students. Two years later the number of schools had dropped to 936 and the number of students to 101,112. A similar falling off is noticeable also between 1892 and 1893. The violent fluctuations in the printed statistics of different years should not be attributed to rapid increase or decrease in the number of schools, but in part to peculiar conditions affecting the collection of statistics, and in part to changes in the form of inquiry. These changes grew out of efforts to arrive at a somewhat precise distinction between elementary and secondary school work. Such efforts had become necessary both by reason of the great increase in the number of high schools and classes, due to the development of the public school systems of the Southern and Northwestern States, and also in the number of so-called secondary courses of study. From the nature of the case the best means of arriving at the facts desired under the new conditions could not be immediately determined. The statistics and discussions of secondary education for several years indicate the complications of this problem and the progress made toward its satisfactory solution. Considering secondary students without reference to the class of institution in which they are found, the increase in the number of such students has been quite regular on the whole. So far as actual secondary work is concerned, the statistics for the successive years up to 1890 are quite as valuable as the reports of the past five years, and afford proper bases of comparison with the statistics of later years.

The following table shows the number of secondary schools reporting to this office each year from 1871 to 1894, and the number of high school students reported each year:

Year reported.	Public.		Private.		Total.	
	Schools.	Students.	Schools.	Students.	Schools.	Students.
1871.....			638	80,227		
1872.....			811	98,929		
1873.....			944	118,570		
1874.....			1,081	98,179		
1875.....			1,143	108,235		
1876.....	192	22,982	1,229	106,647	1,421	129,629
1877.....	195	24,925	1,220	98,371	1,421	123,296
1878.....	218	28,124	1,227	100,374	1,445	128,498
1879.....	240	27,163	1,230	108,734	1,470	135,897
1880.....	244	26,009	1,264	110,277	1,508	136,886
1881.....	251	36,594	1,336	122,617	1,587	159,211
1882-83.....	263	89,581	1,482	138,394	1,745	177,965
1883-84.....	266	34,072	1,588	152,354	1,854	187,026
1884-85.....	276	35,307	1,617	160,137	1,893	195,444
1885-86.....	471	70,241	1,440	151,050	1,911	221,291
1886-87.....	515	80,004	936	101,112	1,451	181,116
1887-88.....	684	110,009	1,104	126,721	1,848	242,730
1888-89.....	* 713	125,542	1,324	146,561	2,037	272,103
1889-90.....	2,526	202,963	1,632	94,031	4,158	297,894
1890-91.....	2,771	211,596	1,714	98,400	4,485	309,996
1891-92.....	3,035	239,556	1,550	100,739	4,585	340,295
1892-93.....	2,812	232,951	1,434	96,147	4,246	329,098
1893-94.....	3,964	230,274	1,982	118,645	5,946	407,919

* From 1876 to 1889 the figures given in the public high school column apply to city high schools only. From 1890 to 1894 all public high schools are included.

Prior to 1889-90 few public high schools outside of the city systems had been reached. Meanwhile, in the endeavor to sift out pseudo secondary schools, some private schools had been lost that belonged properly in the secondary class. But the view of the whole field had become clearer, and in 1890 a systematic effort was made to collect statistics from the public high schools and classes not reached by the city inquiry, and also from private schools not previously reached or temporarily lost from the list. The result of the effort was the increase in the list from 713 in 1889 to 2,526 in 1890, and the increase of over 75,000 students reported in the public secondary schools. Of course there had been no such actual increase in one year, nor in several years. The Bureau had only reached out and gathered statistics from a source hitherto overlooked, namely, the independent public high schools.

Since 1890 a uniform system of collecting information has been followed, greatly augmenting the value of the statistics of secondary education compiled for the last five years. Similar schedules of inquiry are sent to public and private high schools, and the form of tabulating the statistics is the same for each. This facilitates comparison.

In this chapter will be found the statistical summaries for secondary schools for the scholastic year ended June, 1894. The tables give the numbers of public and private high schools, the numbers of teachers, of students, of graduates, and of students pursuing certain studies in each State and Territory. There are also tables of percentages and comparisons between public and private high schools. Six diagrams

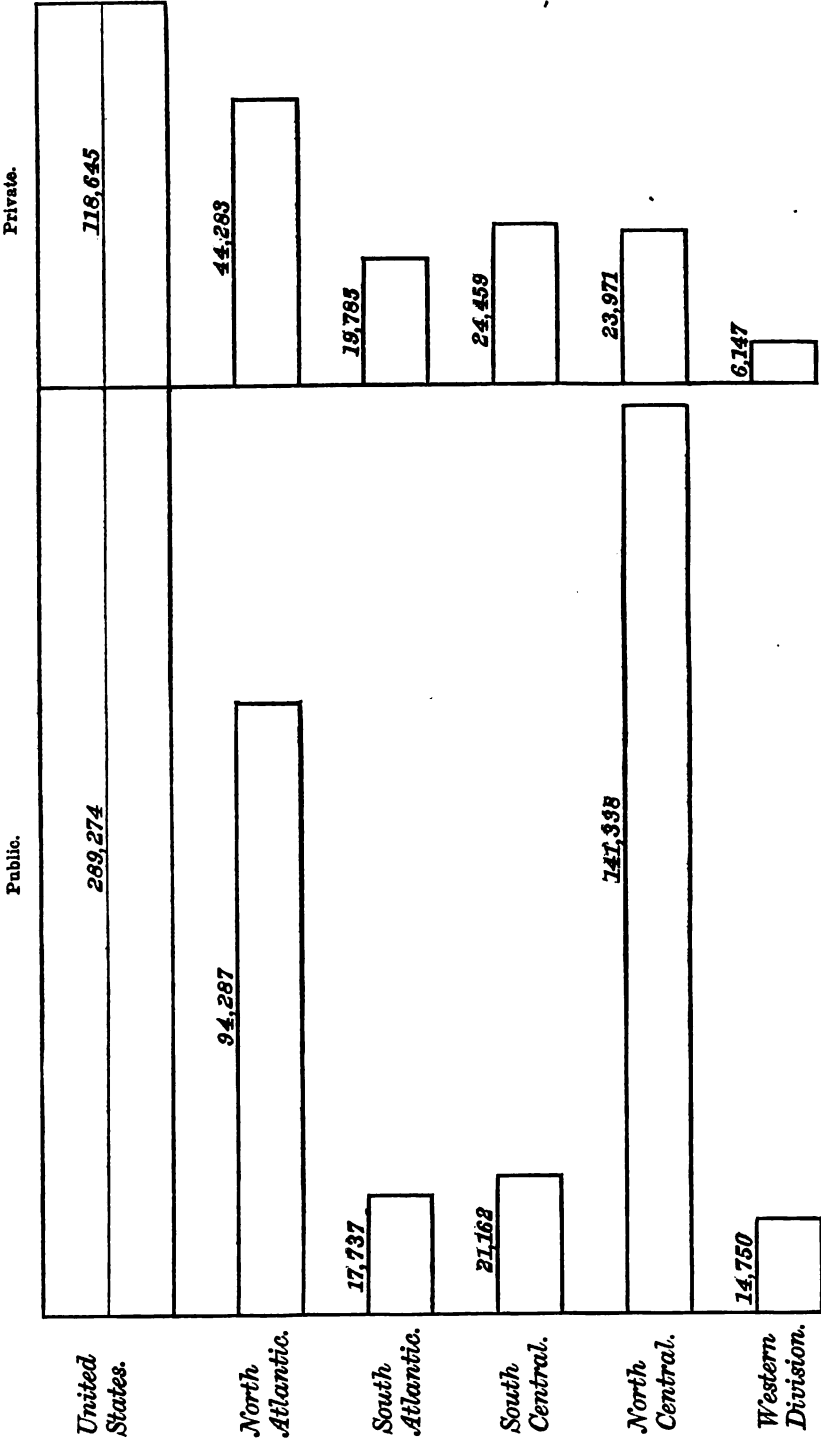


DIAGRAM 1.—Distribution of students in public and private high schools.

are inserted, showing the distribution of secondary students according to the geographical divisions of the country. Diagram 1 serves the double purpose of showing the distribution of students and indicating the comparative prominence of public and private high schools in each division, as well as in the United States as a whole. Diagram 2 shows the ratio of male and female students in the secondary schools. The four remaining diagrams indicate the relative number of students pursuing four leading secondary studies. The six diagrams are easily understood when studied in connection with the tables.

PUBLIC HIGH SCHOOLS.

Reports were received from 3,946 public high schools for the year ended June, 1894. It will be seen by reference to the second column of Table 1 that 1,063 of these schools were in the North Atlantic Division, 294 in the South Atlantic, 389 in the South Central, 2,043 in the North Central, and 175 in the Western Division. The State reporting the largest number of public high schools was Ohio. That State had 402, a greater number than could be found in either the South Atlantic, South Central, or Western Division. New York came next, with 297, and Illinois next, with 272.

The number of teachers instructing the 289,274 secondary students in the 3,964 public high schools was 12,120. More than half of these teachers, or 6,382, were women. In the North Atlantic Division there were 3,899 instructors of secondary students—1,589 men and 2,310 women. In all the other divisions the proportions of male and female teachers are more nearly equal, the male teachers predominating in the South Atlantic and Western divisions. The female teachers in the North Atlantic Division are 59.25 per cent of the teaching force in the public high schools of that section, and this preponderance increases the per cent of female teachers for the United States to 52.66.

A comparison of the first and fourth columns of Table 1 will show that the average number of teachers to each school was 3.1 for the whole country, 3.7 for the North Atlantic Division, 2.8 for the South Atlantic, 2.5 for the South Central, 2.9 for the North Central, and 3.3 for the Western Division. In Table 19 is shown the average number of teachers to each school in each State and Territory. There are marked differences between the averages of different States. Ohio, with 402 schools, has 1,040 teachers, or 2.6 to each school, while New York, with only 297 schools, has 1,161 teachers, or 3.9 to each school. Table 19 also shows the average number of secondary students to each school in each State and the average number to each teacher, as well as the proportion of male and female teachers. Another column of the same table gives the average number of elementary pupils to each school.

The distribution of secondary students is shown in columns 5, 6, and 7 of Table 1. Of the 289,274 secondary students in the public high

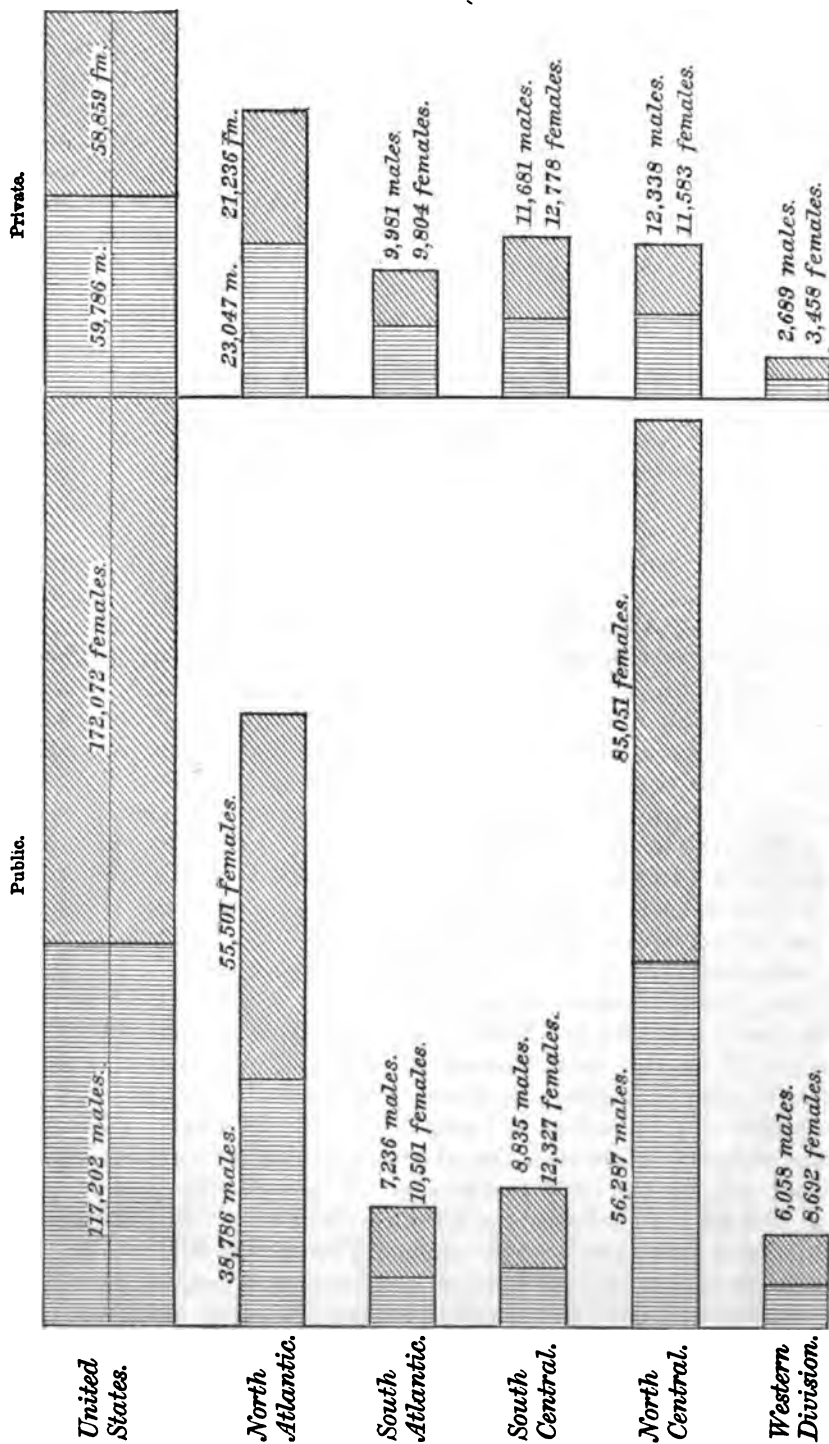


DIAGRAM 2. — Male and female students in public and private high schools.

schools of the United States, 117,202, or 40.45 per cent, were males, and 172,072, or 59.55 per cent, were females. This proportion practically holds good in each of the five divisions, though individual States vary considerably from these percentages. The largest percentage of male students for any State is 47.39, in Mississippi, if we omit Wyoming and New Mexico, where the number of schools is very small. The largest percentage of female students was 65.68, in Louisiana. The second and third columns of Table 6 show these proportions for each State.

The number of colored students included with the 289,274 secondary students was 4,197. Of these 774 were in the North Atlantic Division, 988 in the South Atlantic, 841 in the South Central, 1,554 in the North Central, and 40 in the Western Division. Columns 8, 9, and 10 show the distribution of these colored students among the States.

The number of elementary pupils in the 3,964 public high schools of the United States is much larger than the number of secondary students in the same schools. There were 583,329 of these elementary pupils—282,702 males and 300,627 females. Thus, while the number of secondary students to each school was 73, the number of pupils below the secondary or high school grades was 147 to each school. The average number of elementary pupils to each public high school in the North Atlantic Division was 122, in the South Atlantic 111, in the South Central 181, in the North Central 156, and in the Western Division 182. Compare these averages with the average number of secondary students in each school as shown in Table 19. Compare columns 2 and 4 by divisions and by States.

The principal of each public high school was asked to report the number of students preparing for the college classical course and the number preparing for a scientific course in college or technical school. When summarized, these reports show that 22,774 students were preparing for the college classical course and 18,606 were preparing for a college scientific course. These figures are not considered important, from the fact that the questions were differently understood by different principals. Many gave the number of students pursuing courses in the directions indicated; others reported only students who had declared their purpose of studying for college; others failed to answer the questions for the reason that they did not know the number of students preparing for college. The summaries by States of the two classes of college preparatory students are given in the first six columns of Table 2, and the corresponding percentages will be found in Table 6.

The 3,964 public high schools sent out 37,328 graduates in the spring or summer of 1894, or an average of 9.4 to each school. The number was 12.9 per cent of the number of secondary students. The distribution of these graduates by States can be seen from columns 7, 8, and 9 of Table 2. The average number of graduates to each school in

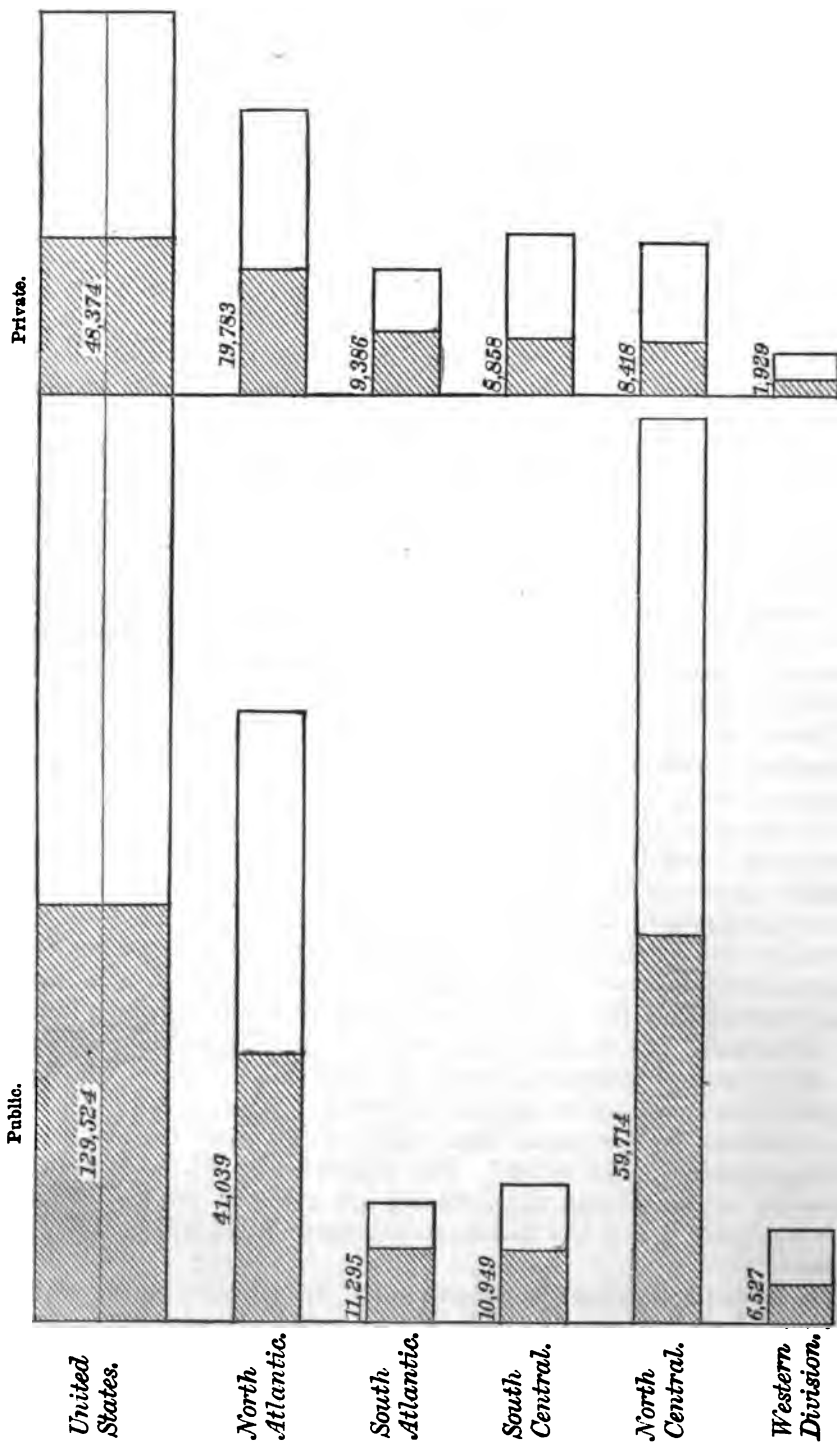


DIAGRAM 3.—Students studying Latin in public and private high schools.

the North Atlantic Division was 12.4, in the South Atlantic 6.5, in the South Central 4.5, in the North Central 9.1, and in the Western Division 10.8. Compare these averages with the average number of students in each school as shown in Table 19.

Of the 37,328 graduates 13,233 were males and 24,095, or 64.55 per cent, were females. The per cent of female graduates, 64.55, is considerably greater than the per cent of female students, 59.55. Not only does the number of female students exceed the number of male students in every State in the Union, but the number of female graduates is very much larger in each State. Fewer boys enter the public high schools and fewer still complete the course of study.

The last column of Table 2 gives the number of students in the graduating classes of 1894 who had been preparing for college. The number was 9,966, or 26.70 per cent of the number graduating. There were 4,797 male college preparatory students among the graduates, and 5,169, or 51.88 per cent, females. It will thus be seen that a larger number of boys than girls, in proportion to the number graduating, are college preparatory students. Of the number of male graduates, 36.25 per cent were preparing for college, while only 21.45 per cent of the girls intended to go beyond the public high school course. The preponderance of male college preparatory students in the graduating class is very great in all the States of the North Atlantic Division and is noticeable in many of the Southern and Western States. A study of the last six columns of Table 2, in connection with the corresponding percentage columns of Table 6 will prove interesting.

STUDENTS AND STUDIES.

High school principals were requested to report the number of students pursuing each of the ten leading secondary studies, Latin, Greek, French, German, algebra, geometry, trigonometry, physics, chemistry, and general history. The reports from the 3,964 public high schools are summarized in Tables 3, 4, and 5. These three tables, giving the number of students in each study in each State and Territory, should be examined in connection with Table 6, which gives the corresponding percentages. These tables are also illustrated by diagrams 3, 4, 5, and 6.

Latin.—The number of students pursuing Latin was 129,524, or 44.78 per cent of the whole number. The per cent of male students studying Latin was 44.40, and the per cent of female students 44.45 per cent. The South Atlantic Division shows the highest percentage of Latin students, 63.68; the South Central comes next, with 51.74; the Western next, with 44.25; the North Atlantic next, with 43.53, and the North Central last, with 42.25 per cent. The State reporting the highest per cent of students in Latin was North Carolina, with 84.80. Next in order come North Dakota, Delaware, Alabama, Maryland, and Georgia, all showing percentages above 65.

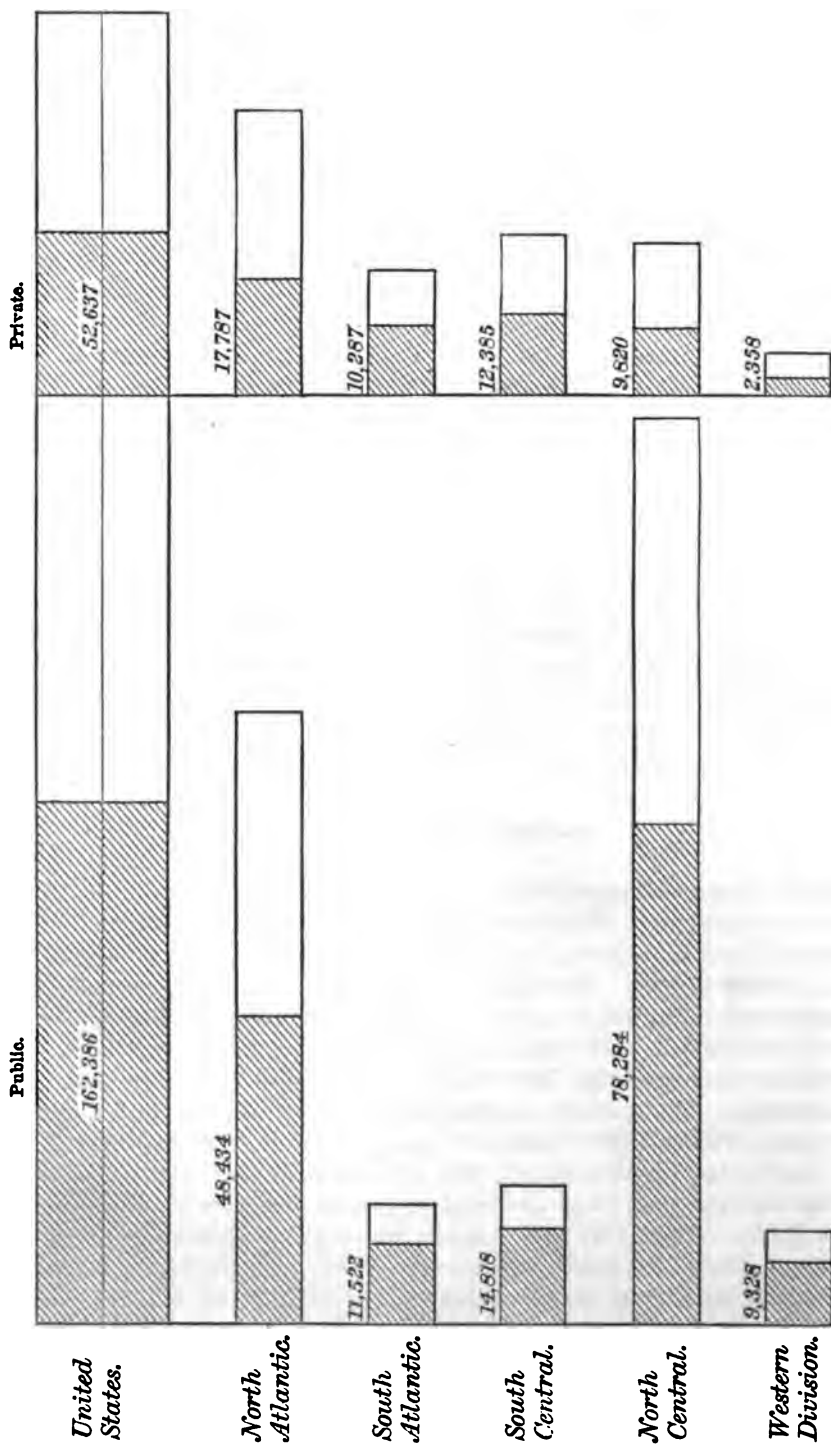


DIAGRAM 4.—Students studying algebra in public and private high schools.

Greek.—Only 9,633 high school students studied Greek. This was only 3.33 per cent of the whole number. The per cent of male students pursuing Greek was 4.95, and the per cent of female students 2.23. In the North Atlantic Division 6.70 per cent of the students pursued this study, 3.81 per cent in the South Atlantic, 2.85 in the Western, 1.70 in the South Central, and 1.32 per cent in the North Central. In eleven of the Western States not a single student was reported as pursuing Greek. Maine shows the largest per cent of students in this language, 13.47, Rhode Island following with 11.64 per cent. In no other State does the rate reach 10 per cent. The only State outside of New England reaching even 6 per cent is Georgia, with a percentage of 7.25.

French.—The number of students in French was 19,702, or 6.81 per cent of the whole. Of this number 6,683 were males and 13,019 females. The per cent of male students pursuing French was 5.74 and the per cent of female students studying the language was 7.56. As in the case of Greek, the North Atlantic Division leads, with the largest percentage, 14.40. The South Atlantic follows, with 8.56 per cent; the Western with 4.34; the South Central with 4.09, and the North Central Division is last, with 2.19 per cent of students in French. The single State showing the largest per cent of students in this language is Louisiana, with 67.27 per cent. Massachusetts is next, with 34.04 per cent, followed by Rhode Island with 24.36, and New Hampshire with 22.01. Eleven States and Territories had no students in French.

German.—The German language was studied by 34,056 students in the public high schools, or 11.77 per cent of the whole number. Of these, 12,665 were males and 21,391 were females. The per cent of males studying the language was 10.80 and the per cent of females 12.43. In the North Atlantic Division 13.01 per cent of the students studied German, in the South Atlantic 12.55, in the Western 12.17, in the North Central 12, and in the South Central only 3.82 per cent. The largest percentage, 33.55, was in Maryland. New Jersey came next, with 30.53, the District of Columbia next, with 30.14, and Colorado next, with 27.59. Oregon had 20.92 per cent of her students in German, and Wisconsin had 20.02. All the other States fell below the last figure, and seven States did not report a single student studying the language.

Algebra.—The high school study claiming the highest number of students was algebra. Of the total, 289,274, there were 162,386, or 56.14 per cent of the whole. The number of males pursuing this branch was 67,553, or 57.64 per cent of the total number of male students. The number of female students in algebra was 94,833, or 55.11 per cent. The Southern schools seem to be strong in mathematical studies. In the South Central Division 70.02 per cent of the students were pursuing the study of algebra, and in the South Atlantic the per cent was 64.96. In the Western Division the per cent was 63.24, in the North Central 55.39, and in the North Atlantic only 51.37. It may be claimed that

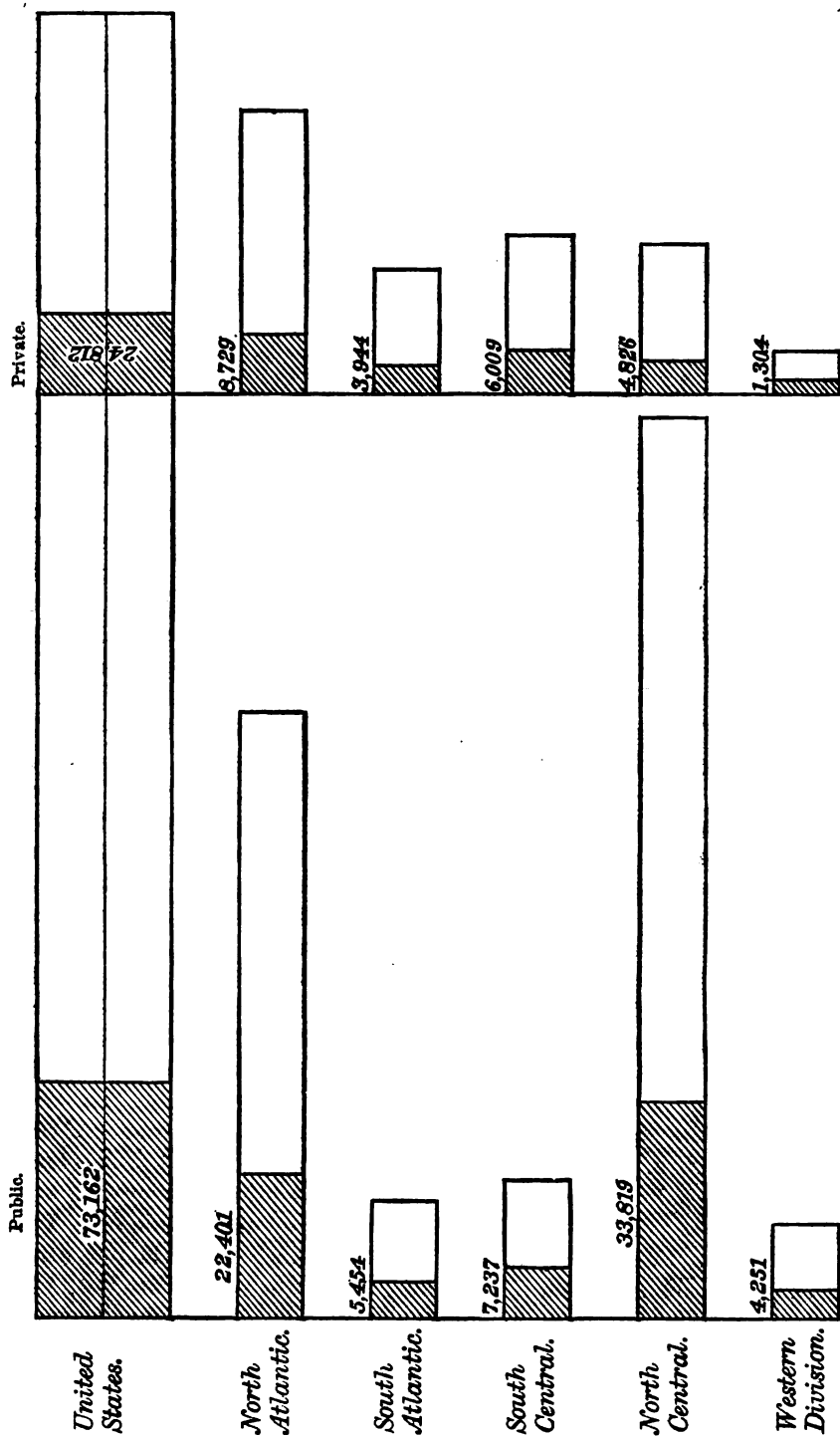


DIAGRAM 5.—Students studying physics in public and private high schools.

in many of the New England schools algebra is begun in the grammar school and is dropped a year sooner in the high school than is the case in most Southern schools.

Geometry.—In the whole country 78,680 public high school students received instruction in geometry. This was 27.20 per cent of the whole number. Of these, 31,368 were males and 47,312 females. The per cent of males studying this branch of mathematics was 26.76 and the per cent of females 27.49. The Western Division shows the largest percentage, 34.69. The South Atlantic shows 33.59 per cent, the South Central 33.19, the North Atlantic 26.37, and the North Central Division 25.27 per cent. In Maryland 71.94 per cent of the students studied geometry and in Louisiana 41.71. California shows a per cent of 40.87 and Texas 40.40. As in the case of the study of algebra, most of the States of the two Northern divisions show smaller percentages of students in geometry than do the Southern and Western States.

Trigonometry.—Comparatively few public high schools include trigonometry in the course of study. Only 8,464 students studied this branch, or 2.93 per cent of the whole. Of these, 4,036 were males and 4,428 females. The per cent of males studying trigonometry was 3.44 and the per cent of females 2.57. Again it is noted that the two Southern divisions take the lead in a mathematical study. In the South Central the per cent is 7.48, in the South Atlantic 6.48, in the Western 2.53, in the North Central 2.33, and in the North Atlantic Division 2.20. In Kentucky the per cent of students studying trigonometry is 14.99, in Maryland it is 10.40, in Georgia 10.39, and in Alabama 10.24. It may be said that most students who take trigonometry in the high school have in view a short course in surveying or civil engineering. Very few of them are college preparatory students.

Physics.—Of the 73,162 students studying physics 30,433 were males and 42,729 were females. It is seen that 25.96 per cent of the males and 24.81 per cent of the females in the schools pursued this branch of study. The per cent. of the total number was 25.29, the largest relative number being in the Southern States. In the South Central Division 34.20 per cent of the students pursued the study of physics, in the South Atlantic 30.75 per cent, in the Western 28.82, in the North Central 23.93, and in the North Atlantic Division 23.76 per cent. Nevada, with only eight schools reported, had 66 per cent of the students in physics, Maryland had 58.94, Mississippi 39.83, and Texas 38.79. This again indicates the practical trend of the courses of study in most of the schools of the South and West.

Chemistry.—The total number studying chemistry was 29,819, or 10.31 per cent of the whole. Of the males 10.02 per cent, or 11,744, and of the females 10.50 per cent, or 18,075, were studying chemistry. The Western Division now takes the lead with 16.17 per cent of the high school students of that section studying chemistry. The South Central Division had 11.57 per cent, the North Atlantic 11.54, the North Cen-

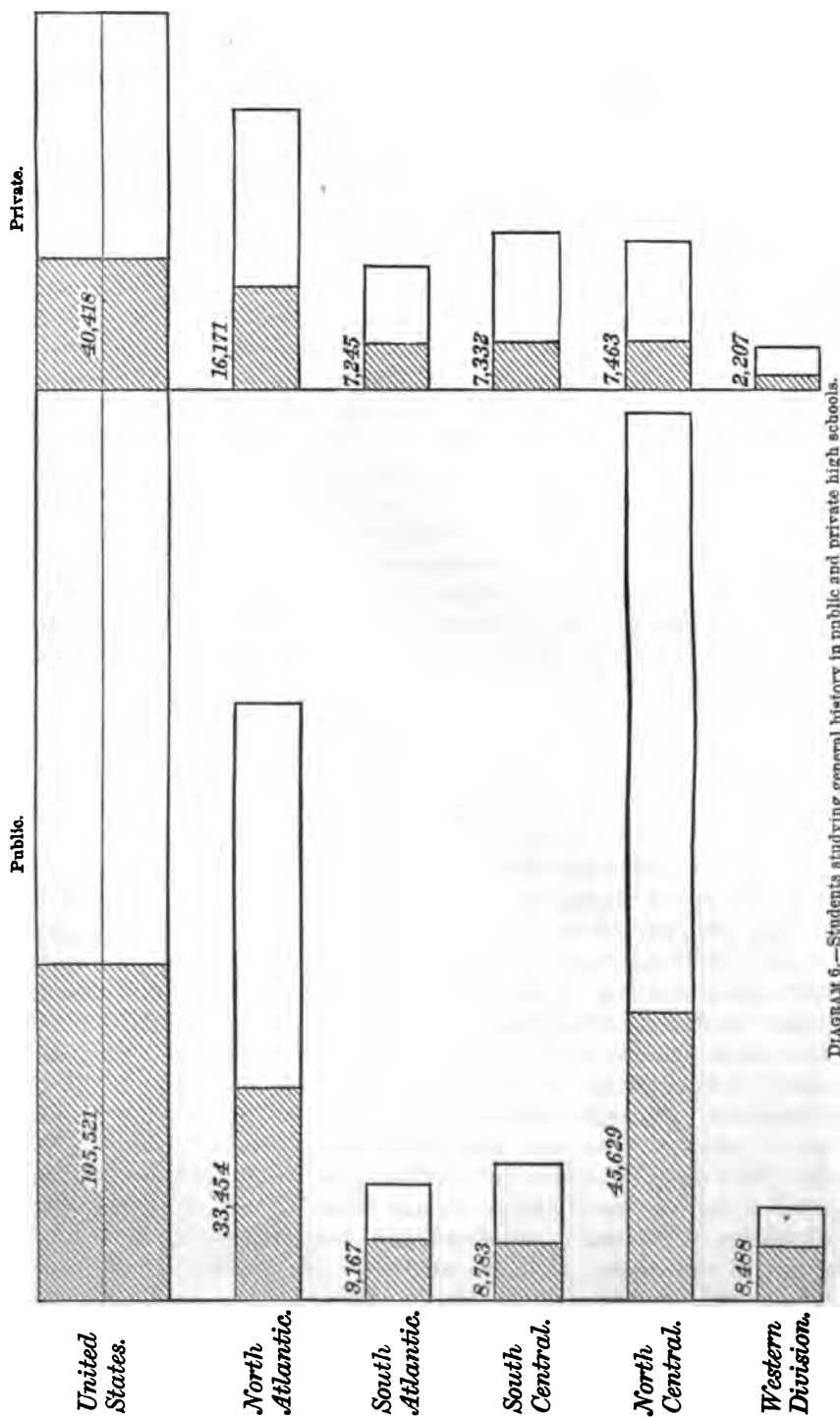


DIAGRAM 6.—Students studying general history in public and private high schools.

tral 9.05, and the South Atlantic 7.39 per cent. Nevada shows 32 per cent, Louisiana 20.11, California 18.41, and Colorado 18.40.

General history.—The importance of historical study is admitted in all the States, as shown by the large percentage of students in all parts of the country pursuing this branch. In the public high schools 105,521, or 36.48 per cent, were reported as studying history other than that of the United States. The per cent of males in this study, compared with the total number of male students, was 36.08, and the per cent of females 36.74. In the Western Division the per cent of the whole number is 57.55, in the South Atlantic 51.68, in the South Central 41.50, in the North Atlantic 35.48, and the North Central Division 32.28. In Louisiana the per cent of students studying general history was 81.71, in Nevada 70, and in Colorado 69.11.

Diagrams 3, 4, 5, and 6 illustrate the proportions of students in four representative studies in the five geographical divisions and in the United States as a whole. Latin, algebra, physics, and general history, representing studies in language, mathematics, natural science, and history, are taken for illustration.

EQUIPMENT AND INCOME.

It is an easy matter for a school officer to report the number of teachers, students, graduates, and the number pursuing certain studies; but it is more difficult to answer questions relating to the income and equipment of the institution. Very few can give more than an estimate of the value of school buildings and grounds, and not all are willing to state the exact amounts of money received from tuition and other sources. For these reasons the figures shown in Table 8 should be taken as summaries of estimates.

The aggregate value of buildings and grounds of the public high schools reporting this item is \$64,638,091. This would give an average value for each institution reporting of \$21,596. The value of the buildings and grounds belonging to public high schools in the North Atlantic Division amounts to \$21,604,054, or \$28,130 for each of the 768 schools reporting; in the South Atlantic the aggregate value is \$1,624,165, or \$7,519 for each of the 216 schools reporting; in the South Central the aggregate is \$3,802,910, or \$11,665 for each school reporting; in the North Central the aggregate is \$32,912,042, or \$21,180 for each school reporting; in the Western Division the aggregate value for all reporting on this item is \$4,694,920, or \$36,395 for each of the 129 schools.

The aggregate amount of State and municipal aid received by the public high schools is shown to be \$8,488,181. This figure is too small, for the reason that many principals found it impossible to give even an estimate of the amount received from this source. This is especially true of high schools in the cities where no separate account is kept of the funds expended for elementary and secondary grades of the city system. Of the 3,964 schools 1,582 failed to report this item.

The schedule sent out from this Bureau to secondary schools called for the amount of State or municipal aid, the amount derived from tuition, and the income from all sources. It was found when the work of tabulation began that the sum of the first two items did not in all cases equal the third, although in many cases it was stated that there were other sources of income. For this reason it was found necessary to correct many of the schedules by inserting "from other sources and unclassified" sums large enough to make the financial statements balance. These necessary estimates force the "other source and unclassified" aggregate up to \$2,956,989. It is probable that a large proportion of this amount more properly belongs in the column of "State and municipal aid," and possibly part of it should have been reported as tuition fees.

The aggregate income of the public high schools from all sources was \$12,274,057. As this item was reported by only 3,109 of the 3,964 schools, the average for each school reporting was \$3,947. If it may be assumed that the 855 schools not reporting the amount of their income each received this average sum the grand aggregate may be shown to be \$15,645,908.

The amount of income reported for the public high schools of the North Atlantic Division was \$3,561,686, or \$4,491 for each school reporting; in the South Atlantic the amount was \$525,020, or \$2,253 to each school reporting; in the South Central the amount was \$961,526, or \$2,870 to each; in the North Central the amount was \$6,206,184, or \$3,842 to each; in the Western Division it was \$1,019,641, or \$7,666 to each school reporting.

Only 2,972 schools are reported as having libraries. It is fair to assume that nearly all the schools failing to report on this item were without libraries. The aggregate number of volumes reported was 1,572,690, or 529 volumes to each school reporting. The public high schools of the North Atlantic Division had 637,056 volumes in their libraries, or 742 to each; in the South Atlantic 46,610 volumes were reported, or 405 to each school reporting; in the South Central the number was 55,575, or 332 to each school; in the North Central there were 783,507 volumes, or 466 to each school; in the Western Division 49,942 volumes were reported, or 326 to each school reporting.

PRIVATE HIGH SCHOOLS.

The statistics of private high schools and academies are summarized in Tables 9 to 18. The statistics of each of the 1,982 schools reporting will be found in the detail tables in the last part of this report. The items tabulated correspond to the items tabulated for public high schools. The tables of summaries 1 to 8 for public high schools are similar to Tables 9 to 16 for private high schools, and may be compared item by item and State by State.

The private high schools are more evenly distributed over the country than is the case with public secondary schools. Of the 1,982 private schools 662 are in the North Atlantic Division, 406 in the South Atlantic, 435 in the South Central, 354 in the North Central, and 125 in the Western Division. New York reported the largest number, 201; Pennsylvania comes next with 139, North Carolina follows with 111, and Tennessee reports 101. The other States had fewer than 100 each.

The number of teachers instructing the 118,645 secondary students in the 1,982 private high schools was 8,007. More than half of these teachers—4,272, or 53.36 per cent—were women. The male teachers numbered 3,735, or 46.64 per cent. The preponderance of female teachers is shown in each of the five geographical divisions, but is more marked in the North Atlantic Division. In the North Atlantic there were 3,429 teachers—1,840 (or 53.66 per cent) women, and 1,589 (or 46.34 per cent) men. In the South Atlantic there were 670 female teachers, or 53.82 per cent, and 575 male teachers, or 46.18 per cent. In the South Central the 712 female teachers constituted 53.61 per cent, and the 616 male teachers 46.39 per cent. In the North Central there were 797 female teachers, or 52.20 per cent, and 730 male teachers, or 47.80 per cent. In the Western Division the numbers were 253 and 225, or 52.93 per cent females to 47.07 per cent males.

The average number of teachers to each of the 1,982 private high schools was 4, or about one more than the average for the public high schools. The average number of teachers to each school in the North Atlantic Division was 5.2, in the South Atlantic 3.1, in the South Central 3.1, in the North Central 4.3, and in the Western Division 3.8. A column in Table 19 shows the average number of teachers in each private high school for each State and Territory.

DISTRIBUTION OF STUDENTS.

The distribution of secondary students in the 1,982 private schools is shown in columns 5, 6, and 7 of Table 9. Of the 118,645 secondary students 59,786, or 50.39 per cent, were males, and 58,859, or 49.61 per cent, were females. This is a more nearly equal division than was noticed in the number of male and female students in the public high schools, where the female students included about 60 per cent of the whole number. In the North Atlantic Division the proportion of male to female students was 52.04 to 47.96, in the South Atlantic 50.45 to 49.55, in the South Central 47.76 to 52.24, in the North Central 51.68 to 48.32, and in the Western Division 43.75 to 56.25. The largest percentage of male students in the private high schools in any State was 67.40 for Wisconsin. The second and third columns of Table 14 give these proportions for each State.

The number of colored students included in the 118,645 secondary students in private high schools was only 3,782. Of these 1,620 are females and 1,162 are males. Only 94 were reported from the North

Atlantic Division, 96 from the North Central, and 3 from the Western Division. These were colored students in white schools. In the South Atlantic 1,630 were reported, and in the South Central 959, all in schools for the colored race. The distribution of colored secondary students by States is shown in columns 8, 9, and 10 of Table 9.

The number of elementary pupils in the 1,982 private high schools was 94,604. Here the girls predominate, the number being 51,345, as against 43,259 boys. In the North Atlantic Division there were 12,098 males and 12,151 females, while in the other divisions the proportion of female students in the elementary grades was much larger.

In the case of public high schools it was seen that the number of elementary pupils was much larger than the number of secondary students, there being 73 secondary and 147 elementary to each school on an average. In the private high schools the proportion of secondary students is much larger than the elementary. There were 60 secondary students and 48 elementary pupils to each school. Table 19 shows the average number of elementary pupils to the school in each State, as well as the average number of secondary students.

The first six columns of Table 10 show the number of secondary students in the private high schools preparing for college. There were 30,736, or 25.91 per cent of the whole number. The per cent preparing for the college classical course was 16.36 and the per cent preparing for a college scientific course was 9.55. Combining columns 4 and 5 of Table 14 it will be seen that 29.62 per cent of the secondary students in the private schools of the North Atlantic Division were preparing for college, 26.79 per cent in the South Atlantic, 23.70 in the South Central, 21.09 in the North Central, and 23.90 per cent in the Western Division. In all the divisions save the Western larger numbers were preparing for the college classical course, but in the latter section the college scientific preparatory students exceed the classical preparatory in number.

The number graduating from the private high schools in the class of 1894 was 11,151, an average of 5.6 to each school. Of the number graduating 5,940 were males and 5,211 females. The number graduating was 9.4 per cent of the whole number of secondary students. The distribution of these graduates by States can be seen from columns 7, 8, and 9 of Table 10. The average number of graduates to each private high school in the United States was 5.6. The average number for the North Atlantic Division was 7.8, for the South Atlantic 3.6, for the South Central 3.7, for the North Central 6.6, and for the Western Division, 4.6.

Of the 11,151 graduates from the private high schools 5,022, or 45.04 per cent, were college preparatory students—3,410 males and 1,612 females. The last columns of Table 10 will show the number of male and female college preparatory students in the class of 1894 in each State and division. In Table 14 will be found the per cent of graduates

in each State prepared for college. In the North Atlantic Division 50.36 per cent were college preparatory graduates; in the South Atlantic, 43.68 per cent; in the South Central, 38.64 per cent; in the North Central, 39.80 per cent; in the Western Division, 39.93 per cent.

STUDENTS AND STUDIES.

Tables 11, 12, and 13 show the number of students in the private high schools in each State pursuing each of the ten principal secondary studies, and Table 15 gives the percentages corresponding. These tables are also illustrated by diagrams 3, 4, 5, and 6, placing the number of students pursuing certain studies in the private high schools in contrast with the number in the same studies in the public high schools.

Latin.—The number of students pursuing Latin was 48,374, or 40.77 per cent of the whole number. In the case of public high schools the per cent was 44.78. The South Atlantic Division shows the highest per cent of private secondary students studying Latin, 47.44. The North Atlantic is next with 44.67 per cent, the South Central has 36.22 per cent, the North Central 35.12, and the Western Division, 31.38.

Greek.—In the private high schools 10,720 students, or 9.04 per cent, studied Greek, while only 3.33 per cent in the public high schools included this language in their course of study. It is noticed that more than half of the students in Greek, or 5,660, were in the North Atlantic Division. It is also significant that 8,914 of the total number were males and only 1,806 were female students.

French.—The number studying French was 22,370, nearly two-thirds of this number, or 14,898, being female students. The number studying French was 18.85 per cent of the whole. More than half, or 12,854, of the students in this language were in the North Atlantic Division, where 29.03 per cent studied French. The percentage for the South Atlantic was 18.39, for the South Central 9.21, for the North Central 11.07, and for the Western Division 15.80.

German.—In the study of the German language the male students take the lead in numbers. Of the 18,096 students in German 9,455 were males and 8,641 females. As in the case of French, more than one-half of the students in German, or 9,135, were in the North Atlantic Division. Of the remainder, 4,958 were in the North Central Division. For the whole country 15.25 per cent of the private secondary students studied German. In Wisconsin the per cent was 46.02.

Algebra.—Of the total number of secondary students in the private high schools 52,637, or 44.37 per cent, studied algebra—28,487 males and 24,150 females. As in the public high schools, this branch claims a greater number of students than any other study, but in the case of the private schools the per cent, 44.37, falls far below the per cent in algebra in the public schools—56.14. In the private schools of the two Southern divisions, as was true of the public schools, the per cent studying algebra was much greater than the per cent in this study

in the other divisions of the country. In the South Atlantic the per cent was 51.99, in the South Central 50.64, in the North Central 40.97, in the North Atlantic 40.17, and in the Western Division 38.36 per cent. In the District of Columbia 73.85 per cent of the private secondary students included algebra in the course of study in 1893-94.

Geometry.—The number studying geometry was 24,374, or 20.54 per cent of the whole. Of this number 14,275 were males and 10,099 were females. There is not a wide variation of percentages for the five divisions, but the individual States show percentages varying from 3.61 to 38.46. In many schools geometry is taken up in the last year of the course, in many instances in the last half of the final year.

Trigonometry.—This branch of mathematics was pursued by 7,036 students—4,441 males and 2,595 females. The percentage for the United States was 5.93. For the South Central Division it was 7.76 per cent, for the North Central 6.99, for the South Atlantic 5.05, for the North Atlantic 4.95, and for the Western Division 4.78 per cent. In Indiana the rate was 13.53, in New Jersey 10.52, and in Michigan 10.44.

Physics.—The number of students pursuing physics, 24,812, was 20.91 per cent of the whole, almost equally divided as to sex in the aggregate. For the five divisions there was considerable variation in the percentages. In glancing down the column of States wide differences will be noted. In Florida 34.14 per cent of the private secondary students studied physics, while in Vermont the per cent was only 12.65. For the North Atlantic Division the per cent studying physics was 19.71 and in the South Central 24.57.

Chemistry.—Of the 12,241 students in chemistry, 6,216 were males and 6,025 females. The per cent to the whole number of private secondary students was 10.32, the five divisions showing but small variation from this rate. As in the case of physics the same wide difference is observed between individual States.

General history.—Measured by the number of students in each study, general history occupies the third place in importance in the private high schools, algebra and Latin claiming larger numbers of students. Of the 118,645 private secondary students, 40,418 were studying general history—18,228 males and 22,190 females. The per cent was 34.07 for the United States, 36.62 for the South Atlantic Division, 36.52 for the North Atlantic, 35.90 for the Western, 31.13 for the North Central, and 29.98 per cent for the South Central Division. In Maryland the rate was 61.22 and in the District of Columbia 54.91.

EQUIPMENT AND INCOME.

About 63 per cent of the private high schools had libraries in 1894. Of the 1,982 only 1,242 reported the number of volumes. In the libraries reported there were 1,420,336 volumes, or an average of 1,144 volumes to each school library. In the North Atlantic Division 68 per cent of the schools had libraries and an average of 1,545 volumes to

each. In the South Atlantic 45 per cent of the schools reported libraries, the average being 932 volumes to each. The per cent of schools having libraries in the South Central was nearly 60, with 613 volumes to each. In the North Central 74 per cent of the private high schools possessed libraries, the average being 1,179 volumes to each. For the Western Division the per cent was 72 of the number of schools, and the average number for those reporting was 997 volumes. In the 63 school libraries reported from Massachusetts there were 111,114 volumes, or 1,732 volumes to each. The 146 schools reporting libraries in the State of New York have 331,161 volumes, or 1,583 to each. Seven schools in the District of Columbia report 30,780 volumes, an average of 4,397 to each.

Only 1,463 of the private secondary schools reported the value of buildings and grounds. These reported a total valuation of \$49,495,897. This would be an average of \$33,831 to each school reporting. In the North Atlantic Division the average value of each was \$60,415, in the South Atlantic \$15,546, in the South Central \$14,179, in the North Central \$35,718, and in the Western Division \$40,329 to each school reporting.

Only 308 schools reported having received State or municipal aid. The total amount thus reported was only \$172,163.

Of the 1,982 schools, 1,259 reported the amounts received from tuition fees, the aggregate for the United States reaching \$5,500,918. The income from "all sources" reported by 1,416 schools aggregated \$8,204,352. This is larger than the sum of State aid and tuition fees, for the reason that many of the schools reported only total income. This made it necessary to insert a column including items "from other sources and unclassified." This column includes the sum of \$2,531,271. A small per cent of this perhaps belongs to the State aid column, a certain per cent was derived from benefactions, but the larger proportion embraces receipts from tuition fees not separately reported. The average total income for each school reporting was \$5,794. The average for the schools of the North Atlantic Division was \$10,515, for the South Atlantic \$2,836, for the South Central \$2,505, for the North Central \$5,474, and for the Western Division \$5,787 to each school reporting.

DENOMINATIONAL SCHOOLS.

Forty-three per cent of the private secondary schools were reported as denominational schools. That is, 852 of these schools were controlled or partially supported by a religious denomination and 1,130 were non-sectarian.

The 1,130 nonsectarian schools had 4,309 teachers and 66,050 students in secondary studies. The 852 denominational schools had 3,698 teachers and 52,595 secondary students. These figures can be verified by reference to Tables 17 and 18.

The Baptist denomination controlled 93 schools with 433 teachers and 7,320 students; the Congregational, 56 schools with 190 teachers and 2,757 pupils; the Episcopal, 112 schools with 579 teachers and 5,402 students; the Friends, 54 schools with 236 teachers and 3,444 students; the Lutheran, 31 schools with 130 teachers and 1,805 students; the Northern Methodist, 57 schools with 322 teachers and 5,781 students; the Southern Methodist, 50 schools with 201 teachers and 4,333 students; the Presbyterian, 97 schools with 338 teachers and 4,889 students; the Roman Catholic, 254 schools with 1,062 teachers and 13,127 students. All other denominations controlled 48 schools with 207 teachers and 3,727 students.

Tables 17 and 18 show in what States these denominational schools are found. It may be remarked that no single denomination controlled secondary schools in every State and Territory of the Union.

PUBLIC AND PRIVATE HIGH SCHOOLS COMPARED.

To emphasize the points of similarity and contrast between public and private high schools Table 20 has been prepared. This table will show for the United States and for each of the five geographical divisions separately, for public high schools, for private high schools, and for both in combination, the number of schools, number of teachers of secondary students, and number of students in secondary studies. These totals are followed by the average number of teachers to a school, average number of secondary students to a school, average number of secondary students to a teacher, average number of graduates to a school, and average number of elementary pupils to a school. All the columns from 11 to 33, inclusive, show percentages. There are shown the percentages of male and female teachers, male and female secondary students, male and female graduates, and male and female college preparatory students in graduating class. There are also shown the percentages of college preparatory students, both classical and scientific, to the total number of secondary students; also the percentages of students pursuing each of the ten leading high school studies.

The average number of teachers to the public high school was 3.1, while the average number to the private high school was 4, as will be seen by reference to column 6. The next column shows the number of secondary pupils to a public school to be 73 and to a private school only 60. This gives 24 students to a teacher in the public and 15 to a teacher in the private school, as shown in column 8. It is probable that in most private high schools the teachers of secondary students were also teachers of the elementary students, while in the public high schools, where the work of each teacher is more strictly confined to certain grades, fewer high school teachers are called upon to instruct elementary pupils.

A glance down columns 6, 7, and 8 will reveal the fact that the disproportion between the number of teachers to the public and to the

private school is about the same in each geographical division. The North Atlantic Division had the greatest number of teachers to the school—3.7 to the public and 5.2 to the private school. The number of secondary pupils to a teacher in the public schools varied from 22 in the two Southern divisions to 24 in the two Northern and 25 in the Western Division. In the private schools the number of students to a teacher was 13 in the North Atlantic and Western divisions, 16 in the South Atlantic and North Central, and 18 in the South Central Division.

The number of secondary students to a public school was 89 and to a private school 67 in the North Atlantic Division. The Western Division is next with 84 and 49, the North Central with 69 and 68, the South Atlantic with 60 and 49, and the South Central with 54 and 56, the latter division being the only one in which the average number of private secondary students was greater than the number of public secondary students to a school.

The average number of graduates to a school in 1894 is shown in column 9. The number was 9.4 to each public school and 5.6 to each private school. This column should be compared with column 18, which shows the per cent of graduates to the number of secondary students. Not only does each division turn out a larger number of graduates from each public high school, but also a larger percentage of graduates to the number of secondary students than from the private high schools.

The average number of elementary pupils to a school is shown in column 10. For public schools the number was 147 to a school, or double the average number of secondary students. For private high schools the number to a school was 48, or only four-fifths as great as the average number of secondary students. The averages for the several divisions show wide variations, the smallest average for public schools being 111 in the South Atlantic, and the highest 182 in the Western Division; the smallest average for the private schools being 37 in the North Atlantic and the highest 70 in the Western Division.

The remaining columns of the table, 11 to 33, deal with percentages. Columns 11 and 12 show the percentages of male and female teachers. In both public and private high schools in each of the divisions, with two exceptions, the number of women who were instructing students exceed the number of male teachers. In the public schools of the South Central only 46.26 per cent were women, and in the Western Division the female teachers were only about 48 per cent of the whole. In the North Atlantic Division they were 59.25 per cent for the public schools and 53.66 per cent for the private schools. In the private schools of each division the force of female teachers was larger than the male force by 2 to 4 per cent.

In columns 13 and 14 will be found the percentages showing the proportion of male and female secondary students. In the public

schools the per cent was 40.45 for males and 59.55 for females, while in the private schools the division was more nearly equal, being 50.39 for males and 49.61 for females. In the five geographical divisions the proportion of male and female students was about as 40 to 60. In the private schools of the North Atlantic Division the per cent of males was 52.04, in the South Atlantic 50.45, in the South Central 47.76, in the North Central 51.68, and in the Western Division 43.75.

The next three columns, 15, 16, and 17, show the proportions of secondary students reported as preparing for college courses, classical or scientific. The per cent of public secondary students preparing for college was 14.30, divided between classical and scientific students in the proportion of 7.87 to 6.43. The per cent of private secondary students preparing for college was 25.91. The per cent of classical students was 16.36, and of scientific students 9.55. The per cent of college preparatory students, combining public and private schools, was largest in the South Central Division, 23.37, the per cent of public and private school college preparatory students being about the same. While the South Central has a larger percentage of college preparatory students in the public high schools than has any other division, the North Atlantic, South Atlantic, and Western divisions had larger percentages in the private schools. The North Atlantic has 29.62 per cent of the private secondary students preparing for college—18.25 per cent classical and 11.37 per cent scientific students. The South Atlantic shows the highest per cent of classical students in the private high schools, 19.36 per cent, while the South Central had the highest per cent of classical preparatory students in the public high schools, 14.36 per cent.

In the public high schools of the North Central Division and in both public and private high schools of the Western Division the scientific college preparatory students outnumber the classical preparatory students. In all other instances, as shown in the table, the classical students are preponderant.

Column 18 shows the per cent of graduates to the whole number of secondary students. In the public high schools the graduating classes of 1894 composed 12.90 per cent of the total. In the private secondary schools the per cent of graduates was 9.40. In all the divisions the public high schools show the highest percentages of graduates.

In column 19 is shown the per cent of college preparatory students in the graduating class of 1894 to the number of graduates. In the public high schools 26.70 per cent had prepared for college, and in the private high schools 45.04 per cent. In all the divisions the private high schools lead the public schools in large percentages of college preparatory graduates. In the North Atlantic 50.36 per cent of the private high school graduates had prepared for college and only 21.63 per cent of the public high school graduates. In the Western Division the per cent of college preparatory students among the graduates was 34.39 for the public high schools and 39.93 for the private secondary schools.

The fact should not be forgotten that the students in the public high schools numbered nearly two and one-half times as many as the number in the private high schools, and that the former turned out 37,328 graduates in 1894 to 11,151 by the latter, and that among the public high school graduates were 9,966 college preparatory students and 5,022 among the private high school graduates.

The per cent of male and female graduates can be seen by inspecting columns 20 and 21. In the public high schools the per cent of male graduates was 35.45 and of female graduates 64.55. It is thus shown that a larger proportion of girls than of boys complete the high school course, for it is seen in columns 12 and 14 that the proportion of male and female students is about as 40 to 60. In the two Southern divisions the per cent of female graduates in the public schools was nearly 69.

In the private high schools the males comprised 53.27 per cent of the graduates. In these schools there was almost an equal number of males and females. Only in the South Central Division did the per cent of female graduates exceed the males. There the per cent was 55.45. In the North Atlantic Division the per cent of male graduates in the private schools was 56.72.

A study of columns 22 and 23 will prove the fact that a larger proportion of young women than young men fail to go beyond the high school. While the female graduates are nearly 60 per cent of the whole number, the proportion of college preparatory students for male graduates is nearly 55 per cent. In the public high schools the proportion is about 48 males to 52 females, and in the private high schools 68 males to 32 females. In the North Atlantic Division the proportion of male college preparatory graduates was even greater, being 57 per cent in the public high schools and nearly 76 per cent in the private high schools. In the North Central and the two Southern divisions more than half the college preparatory graduates from the public high schools were females, but the proportion is much smaller than the proportion of girls graduating. In the Western Division more than 52 per cent of the college preparatory graduates were males for the public schools and 71 per cent for the private high schools. In all the divisions the male college preparatory graduates in the private high schools far exceed in number the female graduates prepared for college.

The remainder of the table, columns 24 to 33, shows the per cent of students pursuing each of the ten leading high school studies. In the public high schools of the United States about 45 per cent of the students pursued Latin and in the private high schools only 41 per cent. In the North Atlantic Division the per cent was 43.53 for the public schools and 44.67 for the private schools. In the South Atlantic 63.68 per cent of the public high school students studied Latin and 47.44 per cent of the private secondary students. In the South Central the per cent was 51.74 for the public and 36.22 for the private schools. In the North Central the percentages for the public and private schools were 42.25 and 35.12, and in the Western Division 44.25 and 31.38.

Greek was studied by only 3.33 per cent of the students in the public high schools and 9.04 per cent in the private high schools of the United States. The corresponding rates for the North Atlantic Division were 6.70 and 12.78.

In the public high schools of the United States 6.81 per cent of the students studied French and 18.85 per cent in the private schools. For the North Atlantic Division the corresponding percentages were 14.40 and 29.03. In the South Atlantic the per cent for the public high schools was 8.56 and for the private high schools 18.39.

German was studied by 11.77 per cent of the students in public high schools, 15.25 per cent in private high schools, the North Atlantic and North Central divisions showing the highest percentages for this study for public and private schools combined.

Algebra is the leading secondary study in both public and private high schools in each of the five geographical divisions, the only exception being in the private high schools of the North Atlantic. For the whole country 56.14 per cent of the students in the public high schools and 44.37 per cent in the private high schools study algebra. As already noted in this chapter, the two Southern divisions lead in mathematical studies. In the South Atlantic the percentages for algebra in the public and private high schools were 64.96 and 51.99, and in the South Central 70.02 and 50.64. In the North Atlantic the corresponding percentages were 51.37 and 40.17, in the North Central 55.39 and 40.97, and in the Western Division 63.24 and 38.36.

Geometry had less than half the number of students claimed by algebra. For the United States the per cent in the public schools was 27.20 and in the private schools 20.54. In all the divisions the percentage was highest in the public high schools, being above 33 per cent in the two Southern divisions and nearly 35 per cent in the Western Division.

Trigonometry claims a percentage of 2.93 in the public high schools and 5.93 in the private schools. In this study the two Southern divisions again lead, the private high schools of the South Central showing a percentage of 7.76.

Physics is the only science study in many secondary schools. It was pursued by 25.29 per cent of the students in the public high schools and 20.91 per cent in the private schools. In this study the South Central Division leads with 34.20 per cent in the public and 24.57 in the private schools.

Chemistry is studied by about 10 per cent of the high school students in the United States, the Western Division leading with 14.68 per cent, 16.17 per cent in the public high schools and 11.11 per cent in the private schools.

General history follows algebra and Latin in importance as a high school study, claiming 35.78 per cent of the whole number of students, 36.48 per cent in the public and 34.07 in the private schools. The West-

ern Division had 57.55 per cent of its public high school students in this study and 35.90 per cent of its private secondary students. The corresponding figures for the South Atlantic were 51.68 and 36.62, for the South Central 41.50 and 29.98, for the North Atlantic 35.48 and 36.52, and for the North Central 32.28 and 31.13.

Diagrams 3, 4, 5, and 6 are graphic comparisons of the number of students in the United States and in the five geographical divisions studying Latin, algebra, physics, and general history, public and private secondary schools being represented in contrast on the same page.

PUBLIC AND PRIVATE SECONDARY STUDENTS.

The distribution of secondary students in high schools, without reference to the classification of public and private, is shown in Tables 21, 22, 23, and 24. These tables deal with numbers and percentages arranged in parallel columns. The first column of Table 21 gives the number of high schools in each State, and the second column the number of secondary students in these schools. The third column gives the number of male students and the fourth column their per cent to the whole number, while the fifth column shows the number of female students and the sixth their per cent to the total. The seventh column gives the number of students preparing for the college classical course and the eighth column their per cent to the whole number of students. The first column of Table 22 shows the number of students preparing for a college scientific course and the next column their per cent. The third column gives the total number preparing for a college course, whether classical or scientific, and the next column shows the per cent to the whole number of students in the schools. As will be seen, column 3 of Table 22 is obtained by combining the seventh column of Table 21 and the first column of Table 22. In the fifth column of Table 22 will be found the number of students graduating in the classes of 1894 and in the next column their per cent to the total. In column 7 of Table 22 is given the number of college preparatory students in the class that graduated in 1894 and the next column shows their per cent to the total number of graduates. Tables 23 and 24 show the number of students in each of the ten high-school studies and the per cent in each to the total number of secondary students.

For greater convenience reference may be made to Table 20, which gives, by divisions, the total numbers of secondary schools, teachers, and students, as well as the numbers for public and private schools separately. In that table the average number of teachers to a school is shown to be 3.4, the average number of students to a school 69, the number of students to a teacher 20, the number of graduates to a school 8.2, and the average number of elementary pupils to a school 114. These averages are for the United States. The averages for each of the five geographical divisions are given in the same table.

From Table 21 it will be seen that of the 407,919 secondary students, 176,988, or 43.39 per cent, are males, and 230,931, or 56.61 per cent, are females. The male students exceed the female students in number only in New Hampshire, New Jersey, Indian Territory, and Utah.

In the high schools of the United States there were 72,116 secondary students preparing for college, or 17.67 per cent of the whole—10.34 per cent for a classical course and 7.33 per cent for a scientific course. The State showing the largest per cent of classical preparatory students was North Carolina, with 20.77 per cent, and the State having the highest per cent of scientific preparatory students was Minnesota, with 17.03 per cent. Arkansas shows the highest per cent of college preparatory students, 36.17 per cent, classical and scientific combined.

The number of students graduating from the high schools in the class of 1894 was 48,479, or 11.88 per cent of the total number of students for that year. The North Atlantic Division had the largest per cent, 13.21, and the South Central the smallest, 7.37. Of the 48,479 graduates there were 14,988 students who had been preparing for college. This number was 30.92 per cent of the number of graduates. The per cent of college preparatory graduates was considerably smaller in the North Atlantic and North Central than in the three other divisions.

Tables 23 and 24 give the numbers and percentages of students pursuing the leading high school studies in each State. Algebra was studied by 52.71 per cent, Latin by 43.59 per cent, general history by 35.78 per cent, geometry by 25.25 per cent, physics by 24.02 per cent, German by 12.78 per cent, French by 10.31 per cent, chemistry by 10.31 per cent, Greek by 4.99 per cent, and trigonometry by 3.80 per cent.

It has been noted that the Southern divisions lead in the per cent of students pursuing mathematical studies and in the per cent of students in Latin. In the South Atlantic 55.12 per cent studied Latin and 57.86 per cent algebra. In the South Central 44.49 per cent studied Latin and 59.63 per cent algebra. The North Atlantic Division shows larger percentages in Greek, French, and German than any other division. The South Atlantic leads in Latin, the South Central in algebra, trigonometry, and physics, and the Western Division in geometry, chemistry, and history.

A study of Tables 23 and 24 will prove of value to those interested in tracing the apparent popularity of certain high school studies. If we suppose that only the ten branches mentioned are taught in the high schools and that each student pursues regularly three of these studies at a time, and only three, it is apparent that the sum of the percentages given for each study should equal 300; that is, the first line of percentages across the tops of Tables 23 and 24 opposite "United States" when added should equal 300, provided each student pursued three and only three studies confined to the ten mentioned in the table. As a matter of fact, the sum of the ten percentages for the

United States is only about 224. It is clear that on an average two of the ten studies were taken and about one-quarter of another, or one-quarter of the time of a third study was taken, leaving about three-fourths of the time for one study to be given to secondary studies not mentioned or to studies below the secondary grade. The sum of the percentages for the North Atlantic Division is nearly 232, showing approximately that two of the ten studies were taken and one-third of the time of another. For the South Atlantic Division the ten percentages equal 252, showing that two studies were taken and more than half of the time of another. For the South Central the sum of the percentages is 228, indicating that an average of two of the ten studies were taken and 28 per cent of the time of another. For the North Central Division the percentages equal 206, showing that two of the studies were pursued, leaving only a small fraction of time for a third. The sum of the percentages for the Western Division is 246, showing that two of the studies were pursued and almost half of the time of a third was taken.

These figures can only show that other studies in addition to the ten mentioned enter into the course in many schools and divide the time of the students, always supposing that each student has three studies at a time. Doubtless in many cases these additional studies are below the secondary grade, but it is certain that not a few schools prescribe in addition to the ten several other high school studies. Among these may be mentioned astronomy, physical geography, geology, zoology, botany, physiology, psychology, rhetoric, civics, and English literature.

OTHER SECONDARY STUDENTS.

In addition to the 407,919 secondary students in public and private high schools there were many others pursuing secondary studies in the public and private elementary schools of the country. In States where high schools are few one or more pupils may be found in almost every common school pursuing certain high school studies. Not a few young men have prepared themselves for college in the elementary schools with the assistance of the country school-teacher who could spare a few minutes' time each day to direct the work of a few students in secondary studies. These secondary students are seldom reported as such to State superintendents of public instruction, and this office is without sufficient data upon which to base an estimate of the number in each State, but it is not improbable that in the United States there are nearly 100,000 students in the elementary schools pursuing secondary studies for at least a portion of the year.

The number of secondary students in the preparatory departments of colleges and universities, in normal schools, and in manual training schools is known. By reference to the statistical summaries of the above classes of institutions it will be found that in the colleges and universities there were 47,976 secondary students, in the colleges for

women 4,576, in normal schools 16,469, and in manual training schools 3,418. These numbers, added to the total for public and private secondary schools, bring the grand total of secondary students up to 480,358. This number does not include any number supposed to be in the elementary schools, but only the secondary students reported to this Bureau for the year ended June, 1894.

Table 25 is a résumé showing the distribution of all the secondary students in the United States as reported to this office. The first 12 columns show the distribution of public secondary students, columns 13 to 28 private secondary students, and the last column gives the total. Columns 1, 2, and 3 recapitulate the numbers of male and female students in the public high schools, giving the total 289,274. In columns 4, 5, and 6 the number of secondary students in the preparatory departments of public colleges and universities will be found, the total being 5,441—males 4,053 and females 1,388. These institutions are State universities and agricultural and mechanical colleges. In columns 7, 8, and 9 are given the numbers of secondary students in public normal schools. The total number was 7,291—males 2,032 and females 5,259. Column 12 shows that the total number of public secondary students was 302,006, the two preceding columns showing that the males numbered 123,287 and the females 178,719.

In column 15 the number of secondary students in private high schools is given—118,645. From column 18 it will be seen that there were 42,535 secondary students in the preparatory departments of private universities and colleges—28,884 males and 13,651 females. Column 19 shows that in the preparatory departments of colleges for women there were 4,576 secondary students. The institutions of higher education previously mentioned are coeducational or for men only. The number of secondary students in private normal schools is given as 9,178 in column 22, there being 5,021 males and 4,157 females. In manual training schools there were 3,418 secondary students—2,059 males and 1,359 females. Only 11 States are here represented, 15 independent manual training and trade schools reporting the 3,418 secondary students. Column 28 shows the total number of private secondary students to have been 178,352. There were 95,750 males and 82,602 females.

The last column of the table gives the grand total of secondary students in the United States so far as reported to the United States Bureau of Education. The total number was 480,358. As shown in columns 29 and 30, there were 219,037 males and 261,321 females. In the North Atlantic Division there were 151,507 secondary students, in the South Atlantic 46,472, in the South Central 58,557, in the North Central 198,210, and in the Western Division 25,612.

TABLE 1.—*Summary of statistics of public high schools.*
SCHOOLS, INSTRUCTORS, AND STUDENTS.

State or Territory.	Number of schools.			Secondary instructors.			Secondary students.			Colored secondary students (included in preceding column).			Elementary pupils.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
United States.	3,064	5,738	6,382	12,120	117,202	172,072	289,274	1,557	2,640	4,197	282,702	309,027	583,329		
North Atlantic Division.	1,063	1,589	2,310	3,899	38,786	55,501	94,287	303	471	774	62,678	67,227	129,905		
South Atlantic Division.	294	400	412	812	7,236	10,501	17,737	333	655	988	15,788	16,974	32,762		
South Central Division.	389	525	452	977	8,835	12,327	21,162	329	512	841	33,893	36,624	70,517		
North Central Division.	2,043	2,921	2,928	5,849	56,287	85,051	141,338	579	975	1,554	154,547	163,701	318,248		
Western Division.	175	303	280	583	6,058	8,692	14,750	13	27	40	15,796	16,101	31,897		
North Atlantic Division:															
Maine.	110	130	132	262	2,673	3,608	6,281	1	5	6	962	1,213	2,175		
New Hampshire.	44	55	71	126	1,200	1,640	2,840	2	2	4	331	325	656		
Vermont.	47	40	60	109	1,093	1,421	2,514	3	4	7	2,184	2,379	4,563		
Massachusetts.	210	368	610	978	11,038	14,199	25,237	62	72	134	794	1,027	1,821		
Rhode Island.	13	33	52	85	771	1,290	2,061	6	4	10	41	27	68		
Connecticut.	56	99	121	220	2,511	2,975	5,486	7	21	28	1,618	1,658	3,276		
New York.	297	409	752	1,161	10,567	15,546	26,113	96	146	242	33,069	35,833	68,893		
New Jersey.	63	88	158	246	2,444	3,347	5,791	64	90	154	9,793	9,924	19,717		
Pennsylvania.	223	358	354	712	6,489	11,475	17,964	62	127	189	13,892	14,841	28,733		
South Atlantic Division:															
Delaware.	12	15	20	35	370	489	859	0	0	0	839	601	1,530		
Maryland.	45	61	81	142	1,266	1,849	3,115	29	75	104	2,472	3,327	5,799		
Dist. of Columbia.	4	41	48	89	690	1,264	1,954	140	320	460	0	0	0		
Virginia.	63	69	73	142	1,193	1,796	2,989	49	90	139	3,141	3,178	6,319		
West Virginia.	16	19	12	31	226	399	625	0	0	0	1,220	1,233	2,453		
North Carolina.	13	16	12	28	304	367	671	5	9	14	1,530	1,669	3,199		
South Carolina.	36	46	48	94	800	1,043	1,843	27	37	64	2,269	2,463	4,732		
Georgia.	88	107	103	210	2,113	2,894	5,007	83	124	207	3,460	3,521	6,981		
Florida.	17	26	15	41	274	400	674	0	0	0	857	892	1,749		
South Central Division:															
Kentucky.	42	68	68	136	1,372	1,951	3,323	60	142	202	3,213	3,361	6,574		
Tennessee.	82	103	69	172	1,569	2,251	3,859	70	125	195	5,495	6,163	11,658		
Alabama.	37	39	36	75	537	909	1,446	0	0	0	2,288	2,302	4,590		
Mississippi.	67	88	73	161	1,416	1,572	2,988	113	96	209	5,022	5,159	10,181		
Louisiana.	10	18	32	50	302	578	880	0	0	0	434	451	885		
Texas.	121	174	148	322	2,999	4,232	7,231	69	104	173	11,872	12,979	24,851		
Arkansas.	25	32	20	52	561	742	1,303	17	45	62	4,384	4,961	9,345		
Oklahoma.	3	2	3	5	31	58	89	0	0	0	1,133	1,014	2,147		
Indian Territory.	2	1	3	4	18	34	52				62	234	286		
North Central Division:															
Ohio.	402	587	453	1,040	10,966	15,173	26,079	161	231	392	24,591	24,810	49,401		
Indiana.	204	323	217	540	5,296	7,615	12,911	107	162	269	14,423	15,841	30,264		
Illinois.	272	457	483	946	8,517	15,093	23,610	72	149	221	14,196	15,067	29,197		
Michigan.	239	327	447	774	7,828	11,296	19,124	32	59	91	27,868	28,992	56,890		
Wisconsin.	170	211	214	425	4,230	5,766	9,996	42	48	90	8,492	8,850	17,342		
Minnesota.	87	131	216	347	3,153	4,667	7,820	5	10	15	8,017	8,451	16,468		
Iowa.	256	369	398	707	6,292	9,348	15,640	17	41	58	10,522	11,638	22,160		
Missouri.	120	205	189	393	3,886	6,631	10,517	65	115	180	15,545	16,320	31,865		
North Dakota.	12	15	10	25	162	220	382	1	1	2	317	326	643		
South Dakota.	19	18	17	35	303	425	728	0	1	1	619	686	1,325		
Nebraska.	133	160	159	319	2,848	4,230	7,078	8	13	21	11,530	12,424	23,954		
Kansas.	129	178	126	304	2,866	4,587	7,453	69	145	214	9,413	10,356	19,769		
Western Division:															
Montana.	14	15	18	33	275	396	671	5	4	9	2,869	3,113	5,982		
Wyoming.	2	2	3	5	79	80	159	0	0	0	502	522	1,024		
Colorado.	84	68	67	135	1,156	1,680	2,842	3	14	17	2,433	2,311	4,953		
New Mexico.	6	6	2	8	71	71	142	2	1	3	317	231	548		
Arizona.	3	5	0	5	50	59	139	0	0	0	90	105	195		
Utah.	2	7	6	13	112	185	297	0	0	0	0	0	0		
Nevada.	8	9	6	15	167	283	450	0	0	0	682	718	1,400		
Idaho.	5	5	4	9	77	103	180	0	1	1	959	932	1,891		
Washington.	25	39	26	65	638	902	1,540	0	0	0	2,159	2,118	4,277		
Oregon.	12	15	15	30	381	599	980	1	0	1	1,768	1,952	3,721		
California.	66	132	133	265	3,052	4,298	7,350	2	7	9	4,016	3,890	7,906		

TABLE 2.—Summary of statistics of public high schools.

STUDENTS AND COURSES OF STUDY.

State or Territory.	Students preparing for college.						Graduates in the class of 1894.			College preparatory students in graduating class of 1894.		
	Classical course.			Scientific course.			Male.	Female.	Total.	Male.	Female.	Total.
	Male.	Female.	Total.	Male.	Female.	Total.						
United States..	11,505	11,260	22,774	9,759	8,847	18,606	13,233	24,095	37,328	4,797	5,109	9,906
North Atlantic Division:												
Maine.....	588	431	1,019	169	97	266	324	531	855	140	88	223
New Hampshire.....	136	160	296	116	78	194	164	231	395	57	48	105
Vermont.....	153	104	257	206	193	399	150	268	418	74	76	150
Massachusetts.....	2,020	1,738	3,758	892	281	1,173	1,518	2,406	3,919	420	365	785
Rhode Island.....	261	148	409	53	71	124	80	137	217	48	27	75
Connecticut.....	376	290	666	416	33	449	279	435	714	156	76	232
New York.....	1,019	614	1,633	965	712	1,677	1,181	1,638	3,019	475	351	826
New Jersey.....	161	138	299	229	102	331	286	551	837	50	89	89
Pennsylvania.....	413	305	718	457	335	792	871	1,888	2,759	203	153	356
South Atlantic Division:												
Delaware.....	68	62	130	9	1	10	48	64	112	13	15	28
Maryland.....	74	46	120	18	17	35	87	246	333	33	12	45
Dist. of Columbia.....	17	16	33	12	6	18	117	299	416	59	24	63
Virginia.....	191	165	356	52	54	106	92	218	310	26	33	59
West Virginia.....	32	17	49	1	0	1	23	64	87	9	10	19
North Carolina.....	57	89	146	20	27	47	20	39	59	10	18	28
South Carolina.....	163	173	336	100	79	179	37	72	109	25	51	76
Georgia.....	563	404	967	84	71	155	189	304	493	84	198	192
Florida.....	21	26	47	28	34	62	18	18	34	6	10	16
South Central Division:												
Kentucky.....	197	276	473	122	108	230	123	221	344	32	52	84
Tennessee.....	182	183	365	152	122	274	107	255	362	27	34	51
Alabama.....	124	154	278	43	28	71	16	73	89	8	9	17
Mississippi.....	326	335	661	126	179	305	86	151	227	56	77	135
Louisiana.....	30	25	55	18	14	32	86	130	166	4	9	13
Texas.....	437	599	1,036	245	298	543	145	285	430	63	82	145
Arkansas.....	61	103	164	185	190	375	88	86	124	13	17	30
Oklahoma.....	4	2	7									
Indian Territory.....	0	0	0	0	0	0	0	4	4	0	0	0
North Central Division:												
Ohio.....	716	672	1,388	662	699	1,361	1,246	2,256	3,502	861	418	799
Indiana.....	261	335	596	285	275	560	617	1,006	1,622	209	218	427
Illinois.....	463	676	1,139	629	872	1,501	954	2,261	3,215	328	456	784
Michigan.....	291	367	658	796	787	1,583	877	1,441	2,318	326	437	763
Wisconsin.....	149	184	333	302	314	616	589	799	1,338	176	178	349
Minnesota.....	129	146	275	670	838	1,508	375	580	905	178	213	391
Iowa.....	313	472	785	314	428	742	824	1,577	2,401	293	429	722
Missouri.....	268	346	614	257	323	580	367	1,014	1,381	146	213	359
North Dakota.....	29	32	61	32	38	70	16	80	48	13	19	32
South Dakota.....	34	47	81	30	25	55	37	89	76	11	6	19
Nebraska.....	332	420	752	166	213	379	285	573	858	173	250	423
Kansas.....	342	511	853	177	231	408	352	610	962	150	246	396
Western Division:												
Montana.....	27	53	80	34	24	58	31	50	81	4	10	14
Wyoming.....	0	0	0	0	2	2	15	8	18	5	3	8
Colorado.....	74	93	167	124	136	260	120	213	333	57	64	121
New Mexico.....	11	7	18	13	14	27	5	11	16	3	5	8
Arizona.....	1	4	5	4	6	10	7	17	24	0	5	5
Utah.....	6	0	6				10	14	24	6	6	12
Nevada.....	10	15	25	7	12	19	19	50	69	2	9	11
Idaho.....	15	10	25	5	6	11	0	18	27	9	7	16
Washington.....	50	78	128	52	67	119	65	114	179	17	15	32
Oregon.....	30	30	60	15	13	28	54	88	142	16	30	46
California.....	255	177	432	467	394	861	409	598	977	221	106	387

TABLE 3.—Summary of statistics of public high schools.

STUDENTS PURSUING CERTAIN STUDIES.

State or Territory.	Latin.			Greek.			French.			German.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
United States.....	52,042	77,482	129,524	5,804	3,829	9,633	6,083	13,019	19,702	12,665	21,391	34,056
North Atlantic Division.....	17,383	23,656	41,039	3,804	2,515	6,319	5,184	8,398	13,582	4,562	7,701	12,263
South Atlantic Division.....	4,645	6,650	11,295	519	156	675	323	1,185	1,518	763	1,463	2,226
South Central Division.....	4,291	6,056	10,949	294	66	360	276	590	866	383	425	808
North Central Division.....	23,097	36,707	59,714	991	868	1,859	769	2,327	3,096	6,287	10,677	16,964
Western Division.....	2,716	3,811	6,527	196	224	420	131	509	640	670	1,125	1,795
North Atlantic Division:												
Maine.....	1,219	1,940	3,159	498	348	846	262	614	876	31	65	96
New Hampshire.....	576	895	1,471	105	116	221	219	406	625	3	6	9
Vermont.....	463	642	1,105	127	59	186	110	183	293	32	69	101
Massachusetts.....	4,987	7,681	12,668	1,327	1,129	2,456	3,621	4,970	8,591	644	1,438	2,082
Rhode Island.....	484	665	1,149	152	88	240	207	295	502	49	176	225
Connecticut.....	1,350	1,494	2,844	267	157	424	245	390	635	241	409	650
New York.....	3,932	4,811	8,743	773	434	1,206	378	1,019	1,397	1,785	2,925	4,710
New Jersey.....	840	1,082	1,922	94	68	162	56	173	229	774	904	1,768
Pennsylvania.....	3,532	4,446	7,978	462	116	578	86	348	434	1,003	1,619	2,622
South Atlantic Division:												
Delaware.....	288	357	645	0	0	0	0	0	0	6	3	9
Maryland.....	1,017	1,160	2,177	149	16	165	127	76	203	414	631	1,045
District of Columbia.....	463	713	1,176	57	41	98	35	172	207	148	441	589
Virginia.....	602	1,198	1,800	8	4	12	46	196	242	144	318	462
West Virginia.....	69	131	200	0	0	0	0	1	1	0	0	0
North Carolina.....	257	342	599	10	0	10	3	10	13	0	0	0
South Carolina.....	391	498	889	15	5	20	27	52	79	7	3	10
Georgia.....	1,407	2,028	3,435	273	90	363	76	668	744	39	50	89
Florida.....	151	253	404	7	0	7	9	20	29	5	17	22
South Central Division:												
Kentucky.....	730	1,285	2,015	113	24	137	8	21	29	253	201	454
Tennessee.....	701	1,234	1,935	28	3	31	15	15	30	20	16	36
Alabama.....	362	698	1,060	52	0	52	13	114	127	16	43	59
Mississippi.....	702	691	1,393	32	9	41	0	36	36	2	1	3
Louisiana.....	268	266	534	0	0	0	227	365	592	0	0	0
Texas.....	1,301	2,080	3,381	64	28	92	13	34	47	79	136	215
Arkansas.....	208	358	566	5	2	7	0	5	5	9	22	31
Oklahoma.....	16	37	53	0	0	0	0	0	0	4	6	10
Indian Territory.....	3	9	12	0	0	0	0	0	0	0	0	0
North Central Division:												
Ohio.....	5,345	8,092	13,437	352	218	570	91	282	373	1,054	1,629	2,683
Indiana.....	1,975	4,443	7,418	39	22	61	0	0	0	459	700	1,159
Illinois.....	3,434	4,953	8,387	169	177	346	215	932	1,147	965	2,146	3,111
Michigan.....	2,520	3,703	6,223	180	174	354	198	423	621	1,181	1,990	3,171
Wisconsin.....	906	1,497	2,403	15	19	34	20	22	42	776	1,225	2,001
Minnesota.....	1,532	2,481	4,013	85	83	168	117	288	405	421	681	1,102
Iowa.....	2,119	3,718	5,837	26	14	40	14	37	51	522	859	1,381
Missouri.....	1,401	2,947	4,348	63	68	131	62	234	296	413	539	952
North Dakota.....	139	176	315	0	0	0	0	0	0	1	3	4
South Dakota.....	119	187	306	0	0	0	3	9	12	10	26	36
Nebraska.....	1,158	2,002	3,160	45	63	108	40	90	130	212	398	610
Kansas.....	1,359	2,508	3,867	17	30	47	9	10	19	273	481	754
Western Division:												
Montana.....	128	211	339	0	0	0	3	12	15	3	12	15
Wyoming.....	51	50	101	0	0	0	0	0	0	0	0	0
Colorado.....	658	1,018	1,676	71	71	142	60	180	240	288	496	784
New Mexico.....	17	25	42	0	0	0	0	0	0	2	0	2
Arizona.....	9	15	24	0	0	0	0	0	0	0	0	0
Utah.....	49	78	127	2	3	5	3	22	25	5	19	24
Nevada.....	22	56	78	0	0	0	0	0	0	4	4	8
Idaho.....	20	24	44	0	0	0	0	0	0	0	0	0
Washington.....	213	319	532	16	20	36	11	12	23	75	112	187
Oregon.....	113	111	224	0	0	0	0	0	0	61	144	205
California.....	1,436	1,904	3,340	107	130	237	54	283	337	232	338	570

TABLE 4.—*Summary of statistics of public high schools.*

STUDENTS PURSUING CERTAIN STUDIES.

State or Territory.	Algebra.			Geometry.			Trigonometry.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
United States.....	67,553	94,833	162,386	31,368	47,312	78,680	4,036	4,428	8,464
North Atlantic Division..	21,086	27,348	48,434	10,566	14,298	24,864	1,178	893	2,071
South Atlantic Division..	4,076	6,846	11,522	2,363	3,594	5,957	532	617	1,149
South Central Division..	6,271	8,547	14,818	2,765	4,258	7,023	673	909	1,582
North Central Division..	31,707	46,577	78,284	13,743	21,977	35,720	1,448	1,841	3,289
Western Division.....	3,813	5,515	9,328	1,931	3,185	5,116	205	168	373
North Atlantic Division:									
Maine.....	1,522	1,805	3,327	720	891	1,611	23	7	30
New Hampshire.....	616	687	1,303	298	411	709	22	6	28
Vermont.....	495	630	1,131	260	327	587	4	0	4
Massachusetts.....	5,215	5,471	10,686	3,241	3,743	6,984	174	82	256
Rhode Island.....	465	500	965	229	287	516	8	0	8
Connecticut.....	1,497	1,558	3,055	655	874	1,529	141	79	220
New York.....	4,856	6,765	11,621	2,541	3,321	5,862	313	282	595
New Jersey.....	1,633	2,305	3,938	629	907	1,536	85	73	158
Pennsylvania.....	4,787	7,621	12,408	1,993	3,537	5,530	408	364	772
South Atlantic Division:									
Delaware.....	249	324	573	116	202	318	33	0	33
Maryland.....	832	1,603	2,435	824	1,417	2,241	138	186	324
District of Columbia..	234	460	700	234	274	508	52	8	60
Virginia.....	848	1,205	2,053	251	451	702	62	87	149
West Virginia.....	182	263	445	58	111	169	8	16	24
North Carolina.....	220	275	495	59	78	137	1	0	1
South Carolina.....	479	588	1,067	132	161	293	5	5	10
Georgia.....	1,448	1,908	3,356	595	817	1,412	219	301	520
Florida.....	184	214	398	94	83	177	14	14	28
South Central Division:									
Kentucky.....	975	1,463	2,438	525	701	1,226	212	286	498
Tennessee.....	1,063	1,439	2,502	410	622	1,032	75	97	172
Alabama.....	419	738	1,157	179	308	487	64	84	148
Mississippi.....	899	896	1,795	285	288	573	73	75	148
Louisiana.....	242	278	520	68	290	357	0	0	0
Texas.....	2,249	3,109	5,358	1,148	1,773	2,921	228	295	523
Arkansas.....	390	550	940	136	237	373	19	64	83
Oklahoma.....	31	58	89	14	23	37	2	1	3
Indian Territory.....	3	16	19	0	7	7	0	7	7
North Central Division:									
Ohio.....	6,844	8,957	15,801	3,096	4,517	7,613	623	844	1,467
Indiana.....	3,264	4,424	7,688	1,340	1,996	3,336	118	123	241
Illinois.....	4,803	7,394	12,197	2,127	4,015	6,142	176	223	399
Michigan.....	3,212	5,977	9,189	1,534	2,256	3,790	111	85	196
Wisconsin.....	2,044	2,619	4,663	882	1,268	2,150	29	26	55
Minnesota.....	1,692	2,180	3,872	833	1,183	2,016	24	24	48
Iowa.....	3,579	5,212	8,791	1,443	2,290	3,733	111	149	260
Missouri.....	2,659	4,083	6,742	1,004	1,858	2,862	153	212	365
North Dakota.....	89	117	206	49	71	120	1	0	1
South Dakota.....	183	270	453	69	100	169	3	11	14
Nebraska.....	1,606	2,472	4,078	699	1,140	1,848	62	78	140
Kansas.....	1,732	2,872	4,604	687	1,274	1,961	37	66	103
Western Division:									
Montana.....	150	211	361	53	73	126	10	7	17
Wyoming.....	38	48	86	23	16	39	17	3	20
Colorado.....	680	917	1,597	363	523	886	55	68	123
New Mexico.....	53	49	102	9	20	29	0	0	0
Arizona.....	0	9	15	3	9	12	0	0	0
Utah.....	92	152	244	48	71	119	5	1	6
Nevada.....	155	253	408	35	109	144	4	1	5
Idaho.....	39	61	100	15	31	46	0	0	0
Washington.....	381	471	852	176	254	430	12	16	28
Oregon.....	284	403	687	111	170	281	14	4	18
California.....	1,935	2,941	4,876	1,095	1,909	3,004	88	68	156

TABLE 5.—*Summary of statistics of public high schools.*

STUDENTS PURSUING CERTAIN STUDIES.

State or Territory.	Physics.			Chemistry.			History.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
United States	30,433	42,429	73,162	11,744	18,075	29,819	42,304	63,217	105,521
North Atlantic Division...	9,864	12,537	22,401	4,435	6,445	10,880	13,935	19,519	33,454
South Atlantic Division...	2,327	3,127	5,454	604	706	1,310	3,681	5,486	9,167
South Central Division...	3,012	4,225	7,237	900	1,548	2,448	3,468	5,815	9,283
North Central Division...	13,584	20,235	33,819	5,021	7,775	12,796	17,841	27,788	45,629
Western Division.....	1,646	2,605	4,251	784	1,601	2,385	3,379	5,100	8,488
North Atlantic Division:									
Maine.....	641	881	1,522	263	396	659	768	1,087	1,855
New Hampshire.....	369	416	785	153	183	346	418	548	966
Vermont.....	221	183	404	122	98	220	307	425	732
Massachusetts.....	2,684	3,088	5,772	1,504	1,937	3,441	4,049	5,938	10,887
Rhode Island.....	132	322	454	82	124	206	430	644	1,074
Connecticut.....	689	697	1,386	201	355	556	754	1,138	1,892
New York.....	1,885	1,884	3,769	1,047	1,005	2,052	2,586	3,828	6,414
New Jersey.....	726	987	1,713	191	334	525	963	1,307	2,270
Pennsylvania.....	2,527	4,079	6,606	872	2,003	2,875	2,760	4,904	7,364
South Atlantic Division:									
Delaware.....	132	181	313	63	51	134	148	99	247
Maryland.....	725	1,111	1,836	107	29	136	840	1,375	2,215
District of Columbia.....	181	162	343	69	83	152	389	647	1,036
Virginia.....	359	480	839	92	108	200	620	1,094	1,714
West Virginia.....	55	93	148	13	29	42	132	239	371
North Carolina.....	69	94	163	35	31	66	149	239	388
South Carolina.....	221	288	509	4	31	35	375	477	852
Georgia.....	493	603	1,101	169	243	412	800	1,132	1,932
Florida.....	92	110	202	32	41	73	228	184	412
South Central Division:									
Kentucky.....	373	560	933	217	375	592	507	634	1,141
Tennessee.....	428	737	1,165	129	286	415	595	942	1,537
Alabama.....	207	323	530	119	141	260	207	517	724
Mississippi.....	620	570	1,190	75	104	179	428	596	1,024
Louisiana.....	81	181	262	42	135	177	226	493	719
Texas.....	1,167	1,638	2,805	295	434	729	1,272	1,843	3,115
Arkansas.....	111	206	317	23	64	87	205	245	450
Oklahoma.....	7	8	15	0	0	0	25	36	61
Indian Territory.....	18	2	20	0	9	9	3	9	12
North Central Division:									
Ohio.....	2,484	3,505	5,989	885	1,485	2,370	3,279	4,771	8,050
Indiana.....	1,553	2,126	3,679	533	762	1,295	1,754	2,581	4,335
Illinois.....	2,109	3,624	5,733	936	1,659	2,595	2,774	4,869	7,643
Michigan.....	1,628	2,292	3,910	776	955	1,731	2,375	3,414	5,789
Wisconsin.....	804	1,087	1,891	199	217	416	1,043	1,572	2,615
Minnesota.....	676	817	1,493	310	350	660	968	1,503	2,471
Iowa.....	1,574	2,278	3,852	466	751	1,217	2,059	3,209	5,268
Missouri.....	1,076	1,816	2,892	350	765	1,115	1,453	2,448	3,901
North Dakota.....	30	55	85	13	20	33	74	80	154
South Dakota.....	87	102	189	14	10	24	119	137	256
Nebraska.....	759	1,142	1,901	308	445	753	950	1,566	2,516
Kansas.....	804	1,401	2,205	231	356	587	993	1,638	2,631
Western Division:									
Montana.....	85	108	193	50	52	102	66	108	174
Wyoming.....	12	11	23	0	0	0	25	22	47
Colorado.....	292	462	754	203	320	523	790	1,174	1,964
New Mexico.....	9	16	25	0	1	1	29	30	59
Arizona.....	3	9	12	1	2	3	27	52	79
Utah.....	25	30	54	6	10	16	32	55	87
Nevada.....	114	183	297	45	99	144	113	202	315
Idaho.....	26	23	49	0	0	0	20	18	38
Washington.....	165	218	383	56	65	121	206	275	481
Oregon.....	124	133	257	58	70	128	164	327	491
California.....	701	1,403	2,104	367	986	1,353	1,907	2,846	4,753

TABLE 6.—Percentages for public high schools.

STUDENTS AND COURSES OF STUDY.

State or Territory.	Total number of secondary students.	Per cent to total number.					Per cent of number graduating prepared for college.
		Male.	Female.	Classical preparatory.	Scientific preparatory.	Graduates in 1894.	
United States	289, 274	40.45	59.55	7.87	6.43	12.90	26.70
North Atlantic Division.....	94, 287	41.14	58.86	9.58	5.73	13.93	21.63
South Atlantic Division.....	17, 737	40.80	59.20	12.31	3.46	10.84	27.35
South Central Division.....	21, 162	41.75	58.25	14.36	8.65	8.30	27.62
North Central Division.....	141, 338	39.83	60.17	5.36	6.62	13.18	29.34
Western Division.....	14, 750	41.07	58.93	6.41	9.46	12.81	34.29
North Atlantic Division:							
Maine.....	6, 281	42.56	57.44	16.22	4.24	13.61	26.06
New Hampshire.....	2, 840	42.25	57.75	10.42	6.83	13.91	26.56
Vermont.....	2, 514	43.48	56.52	10.22	15.87	16.63	35.89
Massachusetts.....	25, 237	43.74	56.26	14.91	4.65	15.53	20.03
Rhode Island.....	2, 061	37.41	62.59	19.84	6.02	10.53	34.56
Connecticut.....	5, 486	45.77	54.23	11.59	8.18	13.01	32.49
New York.....	26, 113	40.47	59.53	6.25	6.42	11.56	27.36
New Jersey.....	5, 791	42.20	57.80	5.16	5.72	14.45	10.63
Pennsylvania.....	17, 964	36.12	63.88	4.00	4.41	15.36	12.90
South Atlantic Division:							
Delaware.....	859	43.07	56.93	15.13	1.16	13.04	25.00
Maryland.....	3, 115	40.64	59.36	3.85	1.12	10.69	13.51
District of Columbia.....	1, 954	35.31	64.69	1.69	.92	21.29	15.14
Virginia.....	2, 989	39.91	60.09	11.91	3.55	10.37	19.03
West Virginia.....	625	36.16	63.84	7.84	.16	13.92	21.84
North Carolina.....	671	45.31	54.69	21.76	7.00	8.79	47.46
South Carolina.....	1, 843	43.41	56.59	18.23	9.71	5.91	69.72
Georgia.....	5, 007	42.20	57.80	19.31	3.10	9.25	41.47
Florida.....	674	40.65	59.35	6.97	9.20	5.04	47.06
South Central Division:							
Kentucky.....	3, 323	41.29	58.71	14.23	6.92	10.35	24.42
Tennessee.....	3, 850	41.53	58.47	9.48	7.12	9.40	16.85
Alabama.....	1, 446	37.14	62.86	19.23	4.91	6.15	19.10
Mississippi.....	2, 988	47.39	52.61	22.12	10.21	7.93	56.96
Louisiana.....	880	34.32	65.68	6.25	3.64	18.86	7.83
Texas.....	7, 231	41.47	58.53	14.33	7.51	5.95	33.72
Arkansas.....	1, 363	43.06	56.94	12.59	28.78	9.52	24.19
Oklahoma.....	89	34.83	65.17	7.87	0	7.69	0
Indian Territory.....	52	34.62	65.38	0	0	7.69	0
North Central Division:							
Ohio.....	26, 079	41.82	58.18	5.32	5.22	13.43	22.82
Indiana.....	12, 911	41.02	58.98	4.62	4.34	12.56	26.33
Illinois.....	23, 610	36.07	63.93	4.82	6.36	13.62	24.29
Michigan.....	19, 124	40.93	59.07	3.55	8.28	12.12	32.92
Wisconsin.....	9, 996	42.32	57.68	3.23	6.16	13.39	26.08
Minnesota.....	7, 820	40.32	59.68	3.52	19.28	11.57	43.21
Iowa.....	15, 640	40.23	59.77	5.02	4.74	15.35	30.07
Missouri.....	10, 517	36.95	63.05	6.03	5.51	13.13	26.00
North Dakota.....	382	42.41	57.59	15.97	18.32	12.57	66.67
South Dakota.....	728	41.62	58.38	11.13	7.56	10.44	25.00
Nebraska.....	7, 078	40.24	59.76	10.62	5.35	12.12	49.30
Kansas.....	7, 453	38.45	61.55	11.45	5.47	12.91	41.16
Western Division:							
Montana.....	671	40.98	59.02	11.92	8.64	12.07	17.28
Wyoming.....	150	49.69	50.31	0	1.26	11.32	44.45
Colorado.....	2, 842	40.68	59.32	5.88	9.15	11.72	26.34
New Mexico.....	142	50.00	50.00	12.68	19.01	11.27	50.00
Arizona.....	139	35.97	64.03	3.60	7.19	17.27	20.83
Utah.....	297	37.71	62.29	2.02	-----	8.06	50.00
Nevada.....	450	37.11	62.89	5.56	4.22	15.33	15.94
Idaho.....	180	42.78	57.22	13.89	6.11	15.06	59.26
Washington.....	1, 540	41.43	58.57	8.31	7.73	11.62	17.88
Oregon.....	980	38.88	61.12	6.12	2.86	14.49	25.35
California.....	7, 350	41.52	58.48	5.88	11.71	13.29	39.61

TABLE 7.—Percentages for public high schools.
PER CENT OF STUDENTS IN CERTAIN STUDIES.

State or Territory.	Per cent to total number of secondary students.									
	Latin.	Greek.	French.	German.	Algebra.	Geometry.	Trigonometry.	Physica.	Chemistry.	General history.
United States.....	44.78	3.33	6.81	11.77	56.14	27.30	2.93	25.29	10.31	36.48
North Atlantic Division.....	43.53	6.70	14.40	13.01	51.37	26.37	2.29	23.78	11.54	35.48
South Atlantic Division.....	63.98	3.81	8.56	12.55	64.96	33.59	6.48	30.75	7.89	51.68
South Central Division.....	51.74	1.70	4.09	3.82	70.02	33.19	7.48	34.20	11.57	41.50
North Central Division.....	42.25	1.32	2.19	12.00	55.39	25.27	2.33	23.93	9.05	32.28
Western Division.....	44.25	2.85	4.34	12.17	63.24	34.09	2.53	28.82	16.17	57.55
North Atlantic Division:										
Maine.....	50.29	13.47	13.95	1.53	52.97	25.05	.48	24.23	10.49	20.53
New Hampshire.....	51.80	7.78	22.01	.32	45.88	24.97	.99	27.64	12.18	34.01
Vermont.....	43.95	7.40	11.65	4.02	44.99	23.35	.16	16.07	8.75	29.12
Massachusetts.....	50.20	9.73	34.04	8.25	42.34	27.67	1.01	22.87	13.63	43.14
Rhode Island.....	55.75	11.64	24.36	10.92	46.82	25.04	.39	21.54	10.00	52.11
Connecticut.....	51.84	7.73	11.57	11.85	55.69	27.87	4.01	25.26	10.13	34.49
New York.....	33.48	4.62	5.35	18.04	44.50	22.45	2.28	14.43	7.86	24.56
New Jersey.....	33.19	2.80	3.95	30.53	68.00	26.52	2.73	29.58	9.07	39.20
Pennsylvania.....	44.41	3.22	2.42	14.60	69.07	30.78	4.30	36.77	16.00	40.99
South Atlantic Division:										
Delaware.....	75.09	0	0	1.05	66.71	37.02	3.84	36.44	15.60	28.75
Maryland.....	69.80	5.30	6.52	33.55	78.17	71.94	10.40	58.94	4.37	71.11
District of Columbia.....	60.19	5.02	10.59	30.14	35.82	26.00	3.07	17.55	7.78	53.02
Virginia.....	60.22	.40	8.10	15.46	68.69	23.49	4.98	28.07	8.70	57.34
West Virginia.....	32.00	0	.16	0	71.20	27.04	3.84	23.68	6.72	59.30
North Carolina.....	84.80	1.49	1.94	0	73.77	20.42	.15	24.29	9.84	57.82
South Carolina.....	48.24	1.09	4.29	.54	57.89	15.90	.54	27.62	1.90	46.23
Georgia.....	68.60	7.25	14.86	1.78	67.03	28.20	10.39	21.99	8.23	38.59
Florida.....	59.94	1.04	4.30	3.26	59.05	26.26	4.15	29.97	10.83	61.13
South Central Division:										
Kentucky.....	60.64	4.12	.87	13.66	73.37	36.89	14.90	28.06	17.82	34.34
Tennessee.....	50.26	.81	.78	.94	64.99	26.81	4.47	30.26	10.78	39.92
Alabama.....	73.31	3.65	8.78	4.08	80.01	33.68	10.24	36.65	17.98	50.07
Mississippi.....	40.62	1.37	1.20	.10	60.07	19.18	4.95	39.83	5.99	34.27
Louisiana.....	60.68	0	67.27	0	59.09	41.71	0	29.77	20.11	81.71
Texas.....	46.76	1.27	.65	2.97	74.10	40.40	7.23	38.79	10.08	43.08
Arkansas.....	43.44	.54	.38	2.38	72.14	28.63	6.37	24.33	6.68	34.54
Oklahoma.....	59.55	0	0	11.24	100.00	41.57	3.37	16.85	0	68.54
Indian Territory.....	23.08	0	0	0	36.54	13.46	13.46	38.46	17.31	23.08
North Central Division:										
Ohio.....	51.52	2.19	1.43	10.29	60.50	29.19	5.63	22.96	9.09	30.87
Indiana.....	57.46	.47	0	8.98	59.55	25.84	1.87	28.50	10.03	33.58
Illinois.....	35.52	1.47	4.86	13.18	51.66	26.01	1.69	24.28	10.99	32.37
Michigan.....	32.54	1.85	3.25	16.58	48.05	19.82	1.02	20.45	9.05	30.27
Wisconsin.....	24.04	.34	4.20	20.02	46.65	21.31	.55	18.92	4.16	26.16
Minnesota.....	51.32	2.15	5.18	14.09	49.51	25.78	.61	19.09	8.44	31.60
Iowa.....	37.32	.26	.33	8.83	56.21	23.87	1.06	24.63	7.78	33.68
Missouri.....	41.34	1.25	2.61	9.05	64.11	27.21	3.47	27.50	10.60	37.09
North Dakota.....	82.46	0	0	1.05	53.93	31.41	.26	22.25	8.64	40.31
South Dakota.....	42.03	0	1.65	4.94	62.23	23.21	1.92	25.96	3.30	35.17
Nebraska.....	44.65	1.53	1.84	8.62	57.61	26.11	1.98	26.86	10.64	35.55
Kansas.....	51.89	.63	.25	10.12	61.77	26.31	1.38	29.59	7.88	35.30
Western Division:										
Montana.....	50.52	0	2.24	2.24	53.80	18.78	2.53	28.76	15.20	25.93
Wyoming.....	63.53	0	0	0	54.09	24.53	12.58	14.47	0	29.56
Colorado.....	58.97	5.00	8.44	27.59	56.19	31.18	4.33	26.53	18.40	69.11
New Mexico.....	29.58	0	0	1.41	71.83	20.42	0	17.61	.70	41.55
Arizona.....	17.27	0	0	0	10.79	8.63	0	8.63	2.16	56.84
Utah.....	42.76	1.68	8.42	8.08	82.15	40.07	2.02	21.55	3.37	29.29
Nevada.....	17.33	0	0	1.78	90.67	32.00	1.11	66.00	32.00	70.00
Idaho.....	24.44	0	0	0	55.56	25.56	0	27.22	0	21.11
Washington.....	24.55	2.34	1.49	12.14	55.33	27.92	1.82	24.87	7.86	31.23
Oregon.....	22.86	0	0	20.92	70.10	28.67	1.84	26.23	13.06	50.10
California.....	45.44	3.22	4.56	7.76	66.84	40.87	2.12	29.85	18.41	64.67

TABLE 8.—*Summary of statistics of public high schools.*
EQUIPMENT AND INCOME.

State or Territory.	Libraries.		Grounds, buildings, scientific apparatus, etc.		State and municipal aid.		Tuition fees.		Income from other sources.	Total income from all sources.	
	Schools reporting.	Volumes.	Schools reporting.	Value.	Schools reporting.	Amount.	Schools reporting.	Amount.		Schools reporting.	Amount.
United States.....	2, 972	1, 572, 080	2, 993	\$64, 038, 091	2, 382	\$9, 488, 181	2, 468	\$928, 887	\$2, 956, 989	3, 100	\$12, 274, 057
North Atlantic Division.....											
Maine.....	64	15, 160	73	671, 400	84	454, 430	26	4, 820	18, 472	89	477, 722
New Hampshire.....	30	8, 552	33	654, 500	16	30, 377	25	4, 787	16, 532	33	61, 696
Vermont.....	36	12, 792	30	614, 000	22	78, 446	32	10, 154	6, 560	35	95, 160
Massachusetts.....	153	72, 079	137	5, 628, 370	73	283, 329	77	25, 138	95, 013	125	403, 480
Rhode Island.....	11	7, 285	5	124, 000	2	5, 100	5	2, 635	6, 857	6	14, 592
Connecticut.....	45	30, 526	31	1, 307, 775	20	69, 247	23	14, 021	7, 037	32	90, 305
New York.....	281	353, 477	271	7, 189, 429	240	866, 548	261	123, 740	386, 169	275	1, 376, 457
New Jersey.....	53	29, 750	44	1, 367, 750	32	156, 405	30	35, 294	33, 727	43	225, 426
Pennsylvania.....	183	107, 427	144	4, 053, 830	120	442, 992	124	32, 157	351, 699	155	826, 848
South Atlantic Division.....											
Delaware.....	7	2, 621	8	144, 000	9	37, 316	6	855	5, 198	9	43, 369
Maryland.....	27	4, 089	25	311, 400	20	62, 857	8	3, 038	28, 046	25	93, 941
District of Columbia.....	4	8, 410	0	.....	0	.....	0	0	0	0	0
Virginia.....	17	3, 801	46	258, 275	46	87, 083	26	8, 797	1, 028	48	96, 908
West Virginia.....	11	2, 112	11	185, 290	10	16, 538	7	756	10, 363	14	27, 657
North Carolina.....	6	6, 076	10	91, 700	5	10, 340	6	3, 464	10, 300	9	14, 104
South Carolina.....	13	3, 165	29	141, 800	27	27, 451	25	13, 588	783	28	41, 822
Georgia.....	23	9, 444	72	399, 630	78	94, 885	62	40, 156	35, 229	85	170, 270
Florida.....	7	6, 592	15	92, 100	15	31, 965	2	900	4, 064	15	56, 949
South Central Division.....											
Kentucky.....	25	11, 874	33	629, 750	31	65, 987	30	14, 700	10, 740	35	91, 426
Tennessee.....	20	8, 461	71	761, 185	57	87, 319	51	22, 833	6, 977	67	117, 129
Alabama.....	9	6, 625	29	189, 675	59	31, 303	25	16, 246	4, 047	32	81, 566
Mississippi.....	29	10, 800	59	278, 650	55	67, 019	52	27, 025	5, 761	56	94, 791
Louisiana.....	7	3, 697	4	10, 700	6	6, 322	4	975	43	6	7, 840
Texas.....	61	14, 535	104	1, 312, 290	109	336, 267	94	58, 278	15, 668	110	416, 233
Arkansas.....	12	4, 363	22	456, 150	22	116, 703	14	4, 671	19, 507	22	140, 861
Oklahoma.....	2	200	2	4, 500	2	2, 750	2	220	12, 150	2	16, 120
Indian Territory.....	2	500	2	160, 010	1	19, 000	1	9, 000	0	2	28, 000

North Central Division:											
Ohio.....	307	106,304	813	6,134,353	204	650,678	242	64,323	148,594	287	863,595
Indiana.....	176	100,224	146	2,587,865	98	328,090	96	32,352	46,178	131	406,620
Illinois.....	240	157,844	203	4,445,095	120	420,420	209	64,768	103,209	227	687,403
Michigan.....	112	84,304	194	4,414,685	156	690,798	193	64,001	890,457	209	1,134,266
Wisconsin.....	158	73,800	130	2,705,447	135	389,141	140	31,453	172,620	156	583,214
Minnesota.....	83	52,315	76	2,298,963	135	161,025	36	4,542	100,998	74	276,165
Iowa.....	228	68,616	187	4,072,555	131	573,443	181	53,775	220,468	198	627,696
Missouri.....	107	55,496	84	2,174,772	64	338,092	92	14,562	119,533	99	463,087
North Dakota.....	12	4,215	8	91,300	7	23,322	7	541	1,718	10	25,831
South Dakota.....	17	2,832	14	218,425	10	61,305	11	1,633	14,858	15	77,796
Nebraska.....	118	31,894	103	2,163,572	88	280,188	95	10,714	147,546	111	488,448
Kansas.....	113	43,663	87	1,524,980	69	342,707	81	14,194	55,342	98	412,243
Western Division:											
Montana.....	14	3,496	10	656,000	7	42,500	4	445	94,316	11	137,270
Wyoming.....	2	1,350	1	30,000	1	144	1	0	1,281	1	1,425
Colorado.....	32	13,673	18	939,900	14	87,212	14	1,188	78,238	21	106,668
New Mexico.....	5	1,000	5	65,500	2	6,300	2	800	6,300	4	13,400
Arizona.....	8	1,130	3	199,300	2	450	2	6,998	0	3	7,448
Utah.....	1	200	2	1,125	0	0	0	0	0	0	0
Nevada.....	7	1,800	8	146,000	6	64,834	2	108	0	6	64,942
Idaho.....	5	3,074	5	180,000	2	119,250	1	100	0	2	119,350
Washington.....	18	5,048	21	990,000	13	72,788	12	1,066	45,826	19	119,650
Oregon.....	8	2,272	9	323,547	6	25,088	7	1,522	4,043	7	30,653
California.....	58	16,899	47	1,103,548	47	321,886	23	11,554	25,365	59	358,805

TABLE 9.—Summary of statistics of private secondary schools.

SCHOOLS, INSTRUCTORS, AND STUDENTS.

State or Territory.	Number of schools.	Secondary instructors.			Secondary students.			Colored secondary students (included in preceding column).			Elementary pupils.		
		Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
United States.....	1,982	3,735	4,272	8,007	59,786	58,859	118,645	1,162	1,620	3,782	43,259	51,345	94,604
North Atlantic Division.....	662	1,589	1,840	3,429	23,047	21,236	44,283	50	44	94	12,098	12,151	24,249
South Atlantic Division.....	406	575	670	1,245	9,981	9,804	19,785	649	981	1,630	8,671	10,941	19,612
South Central Division.....	435	616	712	1,328	11,681	12,778	24,459	405	554	959	11,564	13,373	24,937
North Central Division.....	354	730	797	1,527	12,388	11,583	23,971	56	40	96	7,306	9,860	17,066
Western Division.....	125	225	253	478	2,689	3,458	6,147	2	1	3	3,720	5,020	8,740
North Atlantic Division:													
Maine.....	36	69	87	156	1,497	1,504	3,001	6	4	10	141	214	335
New Hampshire.....	26	84	46	130	1,183	709	1,892	9	5	14	216	297	513
Vermont.....	27	65	92	157	1,346	1,096	2,442	0	1	1	199	121	320
Massachusetts.....	94	205	313	518	2,921	3,114	6,035	14	7	21	561	746	1,307
Rhode Island.....	9	34	29	63	478	341	819	0	0	0	260	491	751
Connecticut.....	61	117	152	269	1,245	1,576	2,821	3	6	9	380	697	1,077
New York.....	201	478	559	1,037	5,898	6,372	12,270	13	16	29	5,758	6,240	11,998
New Jersey.....	69	172	156	328	2,746	1,713	4,459	5	4	9	1,237	1,175	2,412
Pennsylvania.....	139	365	406	771	5,733	4,811	10,544	0	1	1	3,346	2,170	5,516
South Atlantic Division:													
Delaware.....	6	10	17	27	152	221	373	0	0	0	116	89	205
Maryland.....	30	56	111	167	812	1,122	1,934	7	0	7	511	550	1,061
District of Columbia.....	14	25	47	72	445	442	887	0	0	0	210	573	783
Virginia.....	86	132	113	245	1,794	1,567	3,361	9	200	209	920	1,070	1,996
West Virginia.....	9	11	19	30	241	340	581	0	0	0	187	295	482
North Carolina.....	111	150	151	307	3,654	2,598	5,652	270	349	619	2,195	2,514	4,709
South Carolina.....	45	57	63	120	896	939	1,835	71	129	200	1,112	1,239	2,351
Georgia.....	89	117	130	247	2,416	2,374	4,790	235	254	489	3,024	4,153	7,177
Florida.....	10	11	19	30	171	201	372	57	49	106	396	452	848
South Central Division:													
Kentucky.....	73	90	113	203	1,678	1,460	3,136	0	0	0	1,353	1,598	2,951
Tennessee.....	101	155	151	306	2,829	2,983	5,812	8	14	22	2,902	2,891	5,793
Alabama.....	55	75	74	149	1,472	1,243	2,715	51	40	91	1,401	1,612	3,013
Mississippi.....	64	78	75	153	1,449	1,597	3,046	128	164	292	1,797	2,049	3,846
Louisiana.....	35	27	103	130	424	1,171	1,595	37	43	80	626	1,381	2,007
Texas.....	68	131	152	283	2,678	3,335	6,013	139	233	372	2,239	2,654	4,893
Arkansas.....	33	56	33	89	1,004	875	1,879	42	60	102	887	795	1,682
Oklahoma.....	1	0	2	2	0	15	15	0	0	0	0	25	25
Indian Territory.....	5	4	9	13	149	99	248	0	0	0	359	368	727
North Central Division:													
Ohio.....	52	111	138	249	2,590	2,106	4,696	2	1	3	744	1,131	1,875
Indiana.....	22	21	52	73	471	941	1,412	10	10	20	248	1,104	1,350
Illinois.....	51	108	147	255	1,355	1,814	3,169	6	0	6	942	1,792	2,734
Michigan.....	17	26	45	71	468	643	1,111	0	1	1	945	1,564	2,509
Wisconsin.....	27	69	56	125	1,296	627	1,923	0	1	1	541	549	1,090
Minnesota.....	24	58	49	107	801	577	1,468	1	1	2	684	448	1,132
Iowa.....	38	76	76	152	1,310	1,192	2,502	1	1	2	1,002	991	1,993
Missouri.....	78	163	143	306	2,616	2,323	4,939	12	8	20	1,268	1,577	2,845
North Dakota.....	3	4	4	8	81	85	166	0	0	0	98	105	203
South Dakota.....	6	10	15	25	103	189	292	0	1	1	100	131	231
Nebraska.....	15	34	28	62	416	378	794	22	4	26	259	242	501
Kansas.....	21	50	44	94	791	708	1,499	2	12	14	377	226	603
Western Division:													
Montana.....	4	1	5	6	18	76	94	0	0	0	90	170	260
Wyoming.....	1	0	4	4	0	21	21	0	0	0	20	45	65
Colorado.....	7	21	12	33	199	187	386	0	0	0	315	417	732
New Mexico.....	5	6	8	14	57	74	131	0	0	0	75	89	164
Arizona.....													
Utah.....	19	59	28	87	958	782	1,740	0	0	0	934	784	1,718
Nevada.....	2	0	5	5	0	39	39	0	0	0	18	94	112
Idaho.....	1	1	0	1	0	5	5	0	0	0	2	8	5
Washington.....	12	14	29	43	171	576	747	1	1	2	77	253	330
Oregon.....	13	26	24	50	297	282	579	0	0	0	264	280	544
California.....	61	97	138	235	989	1,416	2,405	1	0	1	1,925	2,885	4,810

TABLE 10.—*Summary of statistics of private secondary schools.*

STUDENTS AND COURSES OF STUDY.

State or Territory.	Students preparing for college.						Graduates in class of 1894.			College preparatory students in graduating class of 1894.		
	Classical course.			Scientific course.								
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
United States.....	12,766	6,640	19,406	7,896	3,434	11,330	5,940	5,211	11,151	3,410	1,612	5,022
North Atlantic Division.....	6,004	2,076	8,080	4,128	909	5,037	2,932	2,237	5,169	1,967	636	2,603
South Atlantic Division.....	2,417	1,413	3,830	790	680	1,470	772	675	1,447	370	282	652
South Central Division.....	2,224	1,686	3,920	1,088	787	1,875	716	891	1,607	352	289	621
North Central Division.....	1,664	1,272	2,936	1,264	855	2,119	1,224	1,123	2,347	556	378	934
Western Division.....	447	193	640	626	208	829	296	285	581	165	67	232
North Atlantic Division:												
Maine.....	392	102	554	45	18	63	153	182	340	83	46	129
New Hampshire.....	527	60	587	178	50	228	127	133	260	82	40	122
Vermont.....	205	61	266	98	43	141	133	109	242	74	24	98
Massachusetts.....	929	458	1,387	605	164	769	428	323	751	338	132	470
Rhode Island.....	96	11	109	53	15	68	53	42	95	45	9	54
Connecticut.....	430	125	555	241	22	263	195	182	377	112	38	150
New York.....	1,489	459	1,948	1,026	237	1,263	872	643	1,515	534	172	706
New Jersey.....	811	178	989	852	136	988	344	183	527	292	57	349
Pennsylvania.....	1,123	562	1,685	1,030	224	1,254	622	440	1,062	407	118	525
South Atlantic Division:												
Delaware.....	16	16	32	10	11	21	10	23	33	2	4	7
Maryland.....	110	124	234	36	256	292	91	77	168	42	43	85
District of Columbia.....	286	13	299	85	6	91	30	32	62	15	23	38
Virginia.....	509	164	673	146	42	188	136	98	234	63	15	78
West Virginia.....	49	26	75	20	5	25	16	6	22	9	1	10
North Carolina.....	749	418	1,167	231	152	383	152	120	272	85	65	150
South Carolina.....	184	193	377	77	14	91	161	123	284	68	48	116
Georgia.....	453	407	860	175	184	359	150	176	326	78	55	133
Florida.....	61	52	113	10	10	20	26	20	46	7	8	15
South Central Division:												
Kentucky.....	246	153	499	141	70	211	132	106	238	43	31	74
Tennessee.....	546	326	872	287	172	459	145	213	359	80	61	141
Alabama.....	316	148	464	129	78	207	108	72	180	58	16	74
Mississippi.....	250	264	514	154	164	318	96	152	248	58	47	105
Louisiana.....	38	145	183	46	32	78	30	111	141	14	49	63
Texas.....	447	438	885	216	211	427	133	180	313	51	38	89
Arkansas.....	278	212	490	70	52	122	45	28	73	24	16	40
Oklahoma.....							0	0	0	0	0	0
Indian Territory.....	13	0	13	45	8	53	26	29	55	24	11	35
North Central Division:												
Ohio.....	301	187	488	162	89	271	219	160	379	53	39	92
Indiana.....	24	103	127	1	0	1	26	89	115	12	40	52
Illinois.....	295	230	525	277	218	495	169	194	363	100	57	157
Michigan.....	19	41	60	80	28	108	41	90	131	30	19	49
Wisconsin.....	141	45	186	42	8	50	143	79	222	39	27	66
Minnesota.....	42	56	98	60	14	74	120	64	184	58	26	84
Iowa.....	163	96	259	109	82	191	169	130	299	75	47	122
Missouri.....	424	305	729	376	299	675	220	178	398	121	58	179
North Dakota.....	11	4	15	0	0	0	8	6	14	3	2	6
South Dakota.....	36	24	60	7	13	20	11	13	24	8	4	12
Nebraska.....	107	82	189	45	29	74	23	40	63	22	23	45
Kansas.....	101	99	200	85	75	160	75	80	155	35	24	60
Western Division:												
Montana.....	4	14	18	0	10	10	3	2	5	3	0	3
Wyoming.....							0	5	5			
Colorado.....	26	10	36	107	21	128	12	13	25	7	1	8
New Mexico.....	2	0	2	7	11	18	4	3	7	4	3	7
Arizona.....												
Utah.....	50	11	61	72	40	112	62	44	106	15	6	21
Nevada.....	0	0	0	0	1	1	0	8	8	0	2	2
Idaho.....	0	1	1				0	0	0	0	0	0
Washington.....	44	27	71	9	43	52	26	17	43	18	6	24
Oregon.....	61	15	76	74	32	106	19	23	42	12	12	24
California.....	260	115	375	357	45	402	170	170	340	106	37	143

TABLE 11.—Summary of statistics of private secondary schools.

STUDENTS PURSUING CERTAIN STUDIES.

State or Territory.	Latin.			Greek.			French.			German.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
United States.....	27,311	21,003	48,314	8,914	1,806	10,720	7,472	14,898	22,370	9,455	8,641	18,096
North Atlantic Division:												
Maine.....	11,403	8,380	19,783	4,742	918	5,660	5,061	7,793	12,854	4,772	4,363	9,135
New Hampshire.....	5,342	4,014	9,356	1,342	196	1,538	1,039	2,509	3,638	1,118	808	1,926
Vermont.....	4,580	4,278	8,858	923	300	1,223	534	1,719	2,253	546	725	1,271
Massachusetts.....	4,945	3,473	8,418	1,567	347	1,914	640	2,014	2,654	2,747	2,211	4,958
Rhode Island.....	1,041	888	1,929	340	45	385	198	773	971	272	534	806
Connecticut.....												
New York.....												
New Jersey.....												
Pennsylvania.....												
South Atlantic Division:												
Delaware.....	558	493	1,051	291	110	401	115	252	367	25	40	65
Maryland.....	793	356	1,149	433	54	487	281	145	426	62	89	151
District of Columbia.....	407	319	726	162	41	203	118	157	275	60	113	173
Virginia.....	1,726	1,396	3,122	830	210	1,040	960	1,495	2,455	330	325	655
West Virginia.....	255	174	429	96	24	120	171	185	356	81	63	144
North Carolina.....	807	663	1,470	265	68	333	215	612	827	218	449	667
South Carolina.....	2,652	2,250	4,902	1,087	245	1,332	1,689	2,745	4,431	1,786	1,806	3,592
Georgia.....	1,530	629	2,159	822	64	886	820	641	1,461	953	587	1,540
Florida.....	2,675	2,100	4,775	750	102	852	695	1,361	2,056	1,307	1,091	2,398
South Central Division:												
Kentucky.....	87	117	204	15	4	19	44	133	177	16	39	55
Tennessee.....	598	539	1,137	128	7	135	154	727	881	330	325	655
Alabama.....	328	112	440	139	0	139	114	291	405	113	62	175
Mississippi.....	1,123	632	1,755	139	4	143	279	410	689	352	129	481
Louisiana.....	60	96	156	20	3	23	17	48	65	23	43	66
Texas.....	1,399	970	2,369	374	66	440	112	284	396	163	96	259
Arkansas.....	570	351	921	109	10	119	200	305	505	81	87	168
Oklahoma.....	1,075	1,139	2,214	353	93	446	118	373	491	85	68	153
Indian Territory.....	82	88	170	5	9	14	1	28	29	5	9	14
North Central Division:												
Ohio.....	790	645	1,435	261	50	311	51	249	300	139	151	290
Indiana.....	1,156	1,125	2,281	238	112	350	48	212	260	112	146	258
Illinois.....	601	404	1,005	112	13	125	68	190	258	60	50	110
Michigan.....	489	596	1,085	112	32	144	25	56	81	8	25	33
Wisconsin.....	152	222	374	39	2	41	247	763	1,010	9	34	43
Minnesota.....	849	953	1,802	106	58	164	51	197	248	173	246	419
Iowa.....	417	289	706	52	32	84	43	49	92	53	52	105
Missouri.....	0	12	12	0	0	0	0	1	1	0	5	5
North Dakota.....	36	32	68	3	1	4	1	2	3	2	6	8
South Dakota.....	938	699	1,637	268	54	322	139	412	551	435	467	902
Nebraska.....	279	337	616	60	17	77	14	204	218	112	184	296
Kansas.....	760	572	1,332	202	60	262	91	522	613	359	351	710
Montana.....	109	158	267	24	32	56	53	133	186	137	124	261
Wyoming.....	592	169	761	298	4	302	115	100	215	659	326	885
Colorado.....	287	170	457	77	7	84	19	96	115	216	175	391
New Mexico.....	497	350	847	127	44	171	12	8	20	207	156	363
Arizona.....	978	613	1,591	313	46	359	142	378	520	428	271	699
Utah.....	13	6	19	4	0	4	0	10	10	0	4	4
Nevada.....	49	5	54	14	7	21	3	25	28	23	28	51
Idaho.....	156	160	316	60	44	104	6	21	27	61	78	139
Washington.....	287	188	475	120	32	152	105	105	151	110	147	257
Oregon.....												
California.....												
Western Division:												
Montana.....	18	22	40	0	0	0	5	8	13	0	1	1
Wyoming.....	0	18	18	0	0	0	0	0	0	0	0	0
Colorado.....	115	66	181	89	6	95	9	32	41	19	36	55
New Mexico.....	14	18	32	3	6	9	1	2	3	1	0	1
Arizona.....												
Utah.....	129	147	276	23	4	27	8	40	48	52	79	131
Nevada.....	0	25	25	0	1	1	0	4	4	0	1	1
Idaho.....	0	5	5	0	1	1	0	0	0	0	2	2
Washington.....	86	84	170	63	3	66	41	72	113	27	63	90
Oregon.....	153	111	264	42	13	55	37	54	91	51	68	119
California.....	526	392	918	120	11	131	97	561	658	122	284	406

TABLE 12.—*Summary of statistics of private secondary schools.*

STUDENTS PURSUING CERTAIN STUDIES.

State or Territory.	Algebra.			Geometry.			Trigonometry.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
United States.....	28,487	24,150	52,637	14,275	10,099	24,374	4,441	2,595	7,036
North Atlantic Division...	10,145	7,642	17,787	5,948	3,452	9,400	1,682	509	2,191
South Atlantic Division...	5,679	4,608	10,287	2,235	1,420	3,655	631	345	976
South Central Division....	6,195	6,190	12,385	2,727	2,677	5,404	903	996	1,899
North Central Division....	5,309	4,511	9,820	2,679	2,018	4,697	1,033	643	1,676
Western Division.....	1,159	1,109	2,358	686	532	1,218	192	102	294
North Atlantic Division:									
Maine.....	510	532	1,042	278	197	475	26	9	35
New Hampshire.....	508	270	778	294	124	418	82	28	110
Vermont.....	292	324	616	185	170	355	34	7	41
Massachusetts.....	602	700	1,302	339	196	535	169	45	214
Rhode Island.....	254	151	405	182	76	258	84	32	116
Connecticut.....	684	554	1,238	346	303	649	71	22	93
New York.....	2,954	2,349	5,303	1,905	1,180	3,085	525	199	724
New Jersey.....	1,863	744	2,607	1,030	349	1,383	454	15	469
Pennsylvania.....	2,478	2,018	4,496	1,380	857	2,237	287	152	439
South Atlantic Division:									
Delaware.....	68	91	159	32	37	69	3	5	8
Maryland.....	602	700	1,302	339	196	535	128	82	210
District of Columbia...	431	224	655	157	44	201	57	11	68
Virginia.....	1,065	660	1,725	476	145	621	149	71	220
West Virginia.....	97	136	233	40	27	67	18	6	24
North Carolina.....	1,464	959	2,423	416	174	590	80	40	120
South Carolina.....	575	532	1,107	200	211	411	38	31	69
Georgia.....	1,279	1,215	2,494	514	525	1,039	140	144	284
Florida.....	98	91	189	61	61	122	18	5	23
South Central Division:									
Kentucky.....	878	717	1,595	350	225	575	167	120	287
Tennessee.....	1,335	1,357	2,692	546	523	1,069	206	227	433
Alabama.....	821	606	1,427	478	276	754	171	92	263
Mississippi.....	672	779	1,451	264	340	604	107	159	266
Louisiana.....	199	575	774	64	267	331	19	116	135
Texas.....	1,460	1,633	3,093	761	813	1,574	167	246	413
Arkansas.....	629	344	1,073	215	189	404	44	15	59
Oklahoma.....	0	10	10	0	4	4	0	4	4
Indian Territory.....	101	69	170	49	40	89	22	17	39
North Central Division:									
Ohio.....	1,205	806	2,011	556	390	946	331	130	461
Indiana.....	262	314	576	113	189	302	79	112	191
Illinois.....	497	640	1,137	289	314	603	102	68	170
Michigan.....	196	284	482	102	154	256	54	62	116
Wisconsin.....	555	218	773	405	81	486	102	16	118
Minnesota.....	373	283	656	164	103	267	21	7	28
Iowa.....	509	534	1,043	270	238	508	75	46	121
Missouri.....	1,257	978	2,235	571	325	896	169	139	308
North Dakota.....	21	21	42	0	6	6	1	0	1
South Dakota.....	53	65	118	31	30	61	11	0	11
Nebraska.....	161	162	323	81	106	187	35	30	65
Kansas.....	218	226	444	97	82	179	53	33	86
Western Division:									
Montana.....	18	66	84	5	3	8	0	2	2
Wyoming.....	0	5	5	0	0	0	0	0	0
Colorado.....	59	105	164	30	36	66	12	7	19
New Mexico.....	27	39	66	19	15	34	5	7	12
Arizona.....									
Utah.....	229	138	367	101	72	173	43	12	55
Nevada.....	0	25	25	0	15	15	0	5	5
Idaho.....	0	4	4	0	2	2	0	1	1
Washington.....	79	120	199	42	44	86	24	8	32
Oregon.....	139	130	269	53	44	97	12	6	18
California.....	608	567	1,175	436	301	737	96	54	150

TABLE 13.—*Summary of statistics of private secondary schools.*

STUDENTS PURSUING CERTAIN STUDIES.

State or Territory.	Physics.			Chemistry.			History.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
United States	12,550	12,262	24,812	6,216	6,025	12,241	18,228	22,190	40,418
North Atlantic Division...	4,820	3,909	8,729	2,814	2,051	4,865	7,573	8,598	16,171
South Atlantic Division...	1,907	2,037	3,944	830	1,061	1,891	3,389	3,856	7,245
South Central Division...	2,603	3,406	6,009	912	1,382	2,294	2,933	4,399	7,332
North Central Division...	2,547	2,279	4,826	1,329	1,179	2,508	3,523	3,940	7,463
Western Division.....	673	631	1,304	331	352	683	810	1,397	2,207
North Atlantic Division:									
Maine.....	190	215	405	82	108	190	308	394	702
New Hampshire.....	237	94	331	162	88	250	469	193	662
Vermont.....	159	150	309	91	51	142	198	216	414
Massachusetts.....	586	432	1,018	331	339	670	1,033	1,291	2,324
Rhode Island.....	90	99	189	46	43	89	245	156	401
Connecticut.....	196	325	521	109	124	233	468	579	1,047
New York.....	1,244	1,270	2,514	717	642	1,359	2,216	2,960	5,176
New Jersey.....	905	377	1,282	615	183	798	1,094	845	1,939
Pennsylvania.....	1,213	947	2,160	661	473	1,134	1,542	1,964	3,506
South Atlantic Division:									
Delaware.....	18	32	50	16	21	37	45	110	155
Maryland.....	195	326	521	136	155	291	433	751	1,184
District of Columbia...	59	158	217	28	102	130	234	253	487
Virginia.....	450	321	771	150	112	272	692	645	1,337
West Virginia.....	46	37	83	7	16	23	34	79	113
North Carolina.....	487	332	799	139	139	278	874	659	1,533
South Carolina.....	172	235	407	72	111	183	383	412	795
Georgia.....	436	533	969	221	347	568	645	868	1,513
Florida.....	64	63	127	51	58	109	49	79	128
South Central Division:									
Kentucky.....	273	353	626	149	211	360	703	741	1,444
Tennessee.....	455	610	1,065	190	295	485	649	887	1,536
Alabama.....	409	314	723	161	78	239	361	386	747
Mississippi.....	417	575	992	83	141	224	318	422	740
Louisiana.....	86	378	464	26	315	341	80	662	742
Texas.....	747	973	1,720	211	283	494	570	1,037	1,607
Arkansas.....	165	148	313	72	39	111	205	176	381
Oklahoma.....	0	5	5	0	3	3	0	10	10
Indian Territory.....	51	50	101	20	17	37	47	78	125
North Central Division:									
Ohio.....	510	369	879	504	207	711	622	905	1,527
Indiana.....	105	216	321	82	134	216	222	453	675
Illinois.....	328	356	684	99	209	308	355	721	1,076
Michigan.....	102	186	288	79	126	205	161	308	469
Wisconsin.....	322	129	451	70	19	89	607	234	841
Minnesota.....	168	75	243	69	44	113	206	165	371
Iowa.....	285	230	515	49	72	121	331	294	625
Missouri.....	491	491	982	246	256	502	684	759	1,443
North Dakota.....	3	10	13	1	10	11	0	18	18
South Dakota.....	18	9	27	6	2	8	43	73	116
Nebraska.....	93	120	213	41	40	81	117	165	282
Kansas.....	122	88	210	83	60	143	175	145	320
Western Division:									
Montana.....	9	10	19	9	5	14	18	57	75
Wyoming.....	0	0	0	0	0	0	0	21	21
Colorado.....	40	61	101	23	22	45	44	29	73
New Mexico.....	12	18	30	4	7	11	24	39	63
Arizona.....									
Utah.....	128	80	208	113	53	166	160	189	349
Nevada.....	0	2	2	0	0	0	0	2	2
Idaho.....									
Washington.....	44	82	126	15	72	87	93	138	231
Oregon.....	60	61	121	18	41	59	72	97	169
California.....	380	317	697	149	152	301	399	824	1,223

TABLE 14.—Percentages for private secondary schools.

STUDENTS AND COURSES OF STUDY.

State or Territory.	Total number of secondary students.	Per cent to total number.					Per cent of graduates prepared for college.
		Male.	Female.	Classical preparatory.	Scientific preparatory.	Graduates in 1894.	
United States.....	118,645	50.39	49.61	16.36	9.55	45.64	50.30
North Atlantic Division.....	44,283	52.64	47.96	18.25	11.37	11.67	50.36
South Atlantic Division.....	19,785	50.45	49.55	19.36	7.43	7.31	43.69
South Central Division.....	24,459	47.78	52.24	16.03	7.67	6.57	38.84
North Central Division.....	23,971	51.68	48.32	12.25	8.84	9.79	39.80
Western Division.....	6,147	43.75	56.25	10.41	13.49	9.45	39.93
North Atlantic Division:							
Maine.....	3,001	49.88	50.12	18.46	2.10	11.33	37.94
New Hampshire.....	1,892	62.53	37.47	31.03	12.05	13.47	46.93
Vermont.....	2,442	55.12	44.88	10.89	5.77	9.91	40.50
Massachusetts.....	6,035	48.40	51.60	22.98	12.74	12.44	62.58
Rhode Island.....	819	58.36	41.64	13.01	8.30	11.60	58.84
Connecticut.....	2,821	44.13	55.87	19.72	9.32	12.96	39.79
New York.....	12,270	48.07	51.93	15.88	10.29	12.35	46.60
New Jersey.....	4,459	61.58	38.42	22.18	22.16	11.62	66.23
Pennsylvania.....	10,544	54.37	45.63	15.98	11.99	10.07	49.44
South Atlantic Division:							
Delaware.....	373	40.75	59.25	8.58	5.63	8.85	21.21
Maryland.....	1,934	41.99	58.01	12.10	15.16	8.69	50.60
District of Columbia.....	987	50.17	49.83	33.71	10.26	6.99	61.29
Virginia.....	3,361	53.38	46.62	20.09	5.59	6.96	33.33
West Virginia.....	581	41.48	58.52	12.91	4.30	3.79	45.46
North Carolina.....	5,652	54.03	45.97	20.65	6.78	4.61	55.15
South Carolina.....	1,835	46.83	53.17	20.54	4.96	15.48	40.85
Georgia.....	4,790	50.44	49.56	17.95	7.49	6.61	40.80
Florida.....	372	45.97	54.03	30.38	5.38	12.37	32.61
South Central Division:							
Kentucky.....	3,136	53.44	46.56	15.91	6.73	7.59	31.09
Tennessee.....	5,812	46.67	53.33	15.00	7.90	6.18	39.28
Alabama.....	2,715	54.22	45.78	17.09	7.62	6.63	41.11
Mississippi.....	3,046	47.57	52.43	16.67	10.44	8.14	42.34
Louisiana.....	1,595	36.58	63.42	11.47	4.99	8.84	44.68
Texas.....	6,013	44.54	55.46	14.72	7.10	5.21	28.43
Arkansas.....	1,879	53.43	46.57	26.06	6.49	8.88	54.80
Oklahoma.....	15	0	100.00			0	0
Indian Territory.....	248	60.08	39.92	5.24	21.37	22.18	63.64
North Central Division:							
Ohio.....	4,696	55.15	44.85	10.89	5.77	8.07	24.27
Indiana.....	1,412	33.36	66.64	8.99	.07	8.14	45.23
Illinois.....	3,169	42.76	57.24	16.57	15.62	11.45	43.25
Michigan.....	1,111	42.12	57.88	5.40	9.72	11.79	37.40
Wisconsin.....	1,923	67.40	32.60	9.67	2.60	11.54	29.73
Minnesota.....	1,468	60.69	39.31	6.68	5.04	12.53	51.09
Iowa.....	2,502	52.36	47.64	10.35	7.63	11.85	40.80
Missouri.....	4,939	52.97	47.03	14.76	13.67	8.06	44.97
North Dakota.....	166	48.80	51.20	9.04	0	8.43	42.86
South Dakota.....	292	35.27	64.73	20.55	6.85	8.22	50.00
Nebraska.....	794	52.36	47.61	23.80	9.22	7.93	71.43
Kansas.....	1,499	52.77	47.23	13.34	10.67	10.94	38.71
Western Division:							
Montana.....	94	19.15	80.85	19.15	10.64	5.82	60.00
Wyoming.....	21	0	100.00			23.81	
Colorado.....	286	51.55	48.45	9.33	33.16	6.48	32.00
New Mexico.....	131	43.51	56.49	1.53	12.74	5.34	100.00
Arizona.....							
Utah.....	1,740	55.06	44.94	3.51	6.44	6.09	19.81
Nevada.....	89	0	100.00	0	2.56	20.51	25.00
Idaho.....	5	0	100.00	20.00		0	0
Washington.....	747	22.89	77.11	9.50	6.96	5.76	55.81
Oregon.....	570	51.30	48.70	13.13	18.31	7.25	57.14
California.....	2,405	41.12	58.88	15.59	16.72	14.14	42.06

TABLE 15.—Percentages for private secondary schools.

PER CENT OF STUDENTS IN CERTAIN STUDIES.

State or Territory.	Per cent to total number of secondary students.									
	Latin.	Greek.	French.	German.	Algebra.	Geometry.	Trigonometry.	Physica.	Chemistry.	History.
United States.....	40.77	9.04	18.85	15.25	44.37	20.54	5.93	20.91	10.32	34.07
North Atlantic Division.....	44.67	12.78	20.03	20.63	40.17	21.23	4.95	19.71	10.99	36.52
South Atlantic Division.....	47.44	7.77	18.39	9.73	51.99	18.47	5.05	19.93	9.56	36.62
South Central Division.....	36.22	5.00	9.21	5.20	50.64	22.09	7.70	24.57	9.38	29.98
North Central Division.....	35.12	7.98	11.07	30.68	40.97	19.59	6.99	20.13	10.46	31.13
Western Division.....	31.38	6.26	15.80	13.11	38.36	19.82	4.78	21.21	11.11	35.90
North Atlantic Division:										
Maine.....	35.02	13.36	12.23	2.17	34.72	15.83	1.17	13.50	6.33	23.39
New Hampshire.....	60.73	25.74	22.51	7.98	41.12	22.09	5.81	17.49	13.21	34.99
Vermont.....	29.73	8.31	11.26	7.08	25.22	14.54	1.68	12.65	5.81	10.95
Massachusetts.....	51.73	17.33	40.68	10.85	21.57	8.80	3.55	16.87	11.10	38.51
Rhode Island.....	52.38	14.65	43.47	11.48	49.45	31.50	8.06	23.08	10.87	48.96
Connecticut.....	52.11	11.80	29.32	23.64	43.89	23.01	3.30	18.47	8.26	37.12
New York.....	39.95	10.86	36.11	27.65	43.22	25.14	5.90	20.49	11.08	42.18
New Jersey.....	48.42	19.87	37.25	34.54	58.47	31.13	10.52	28.75	17.90	43.49
Pennsylvania.....	45.29	8.08	19.50	22.75	42.64	21.22	4.16	20.49	10.76	33.25
South Atlantic Division:										
Delaware.....	54.69	5.09	47.45	14.75	42.63	18.50	2.14	13.40	9.92	41.55
Maryland.....	58.79	6.98	45.55	33.87	67.32	27.66	8.27	26.94	15.05	61.22
District of Columbia.....	49.61	22.44	45.66	19.73	73.85	22.66	7.67	24.46	14.66	54.91
Virginia.....	52.22	4.25	20.50	14.31	51.32	18.48	6.55	22.94	8.09	39.78
West Virginia.....	32.01	3.96	11.19	11.36	40.10	11.53	4.13	14.29	3.96	19.45
North Carolina.....	41.74	7.78	7.01	4.58	42.87	10.44	2.12	14.14	4.92	27.12
South Carolina.....	50.19	6.49	27.52	6.43	60.33	22.40	3.76	22.18	9.97	43.32
Georgia.....	46.22	9.31	10.25	2.15	52.07	21.69	5.93	20.23	11.86	31.50
Florida.....	45.70	3.76	7.80	3.76	50.81	32.80	6.18	34.14	29.30	34.41
South Central Division:										
Kentucky.....	45.76	9.92	9.57	9.25	50.86	18.34	9.15	19.96	11.48	46.05
Tennessee.....	39.25	6.02	4.47	4.44	46.32	18.39	7.45	18.32	8.34	26.43
Alabama.....	40.33	4.60	9.50	3.68	56.24	27.77	9.69	26.63	8.80	27.51
Mississippi.....	35.62	4.73	2.66	1.08	47.64	19.83	8.73	32.57	7.35	24.29
Louisiana.....	23.45	2.57	63.32	2.70	48.53	20.75	8.46	29.09	21.38	46.52
Texas.....	29.97	2.73	4.12	6.97	51.44	26.18	0.87	23.60	8.22	28.73
Arkansas.....	37.57	4.47	4.90	5.59	57.10	21.50	3.14	16.66	5.91	20.28
Oklahoma.....	80.00	0	6.67	33.33	66.67	26.67	26.67	33.33	20.00	66.67
Indian Territory.....	27.42	1.61	1.21	3.23	68.55	35.89	15.73	40.73	14.92	50.40
North Central Division:										
Ohio.....	34.86	6.86	11.73	19.21	42.82	20.14	9.82	18.72	15.14	26.13
Indiana.....	43.63	5.45	15.44	20.96	40.79	21.39	13.53	22.73	15.30	47.80
Illinois.....	42.03	8.27	19.34	22.40	35.88	19.03	5.36	21.58	9.72	33.95
Michigan.....	24.03	5.04	16.74	23.49	43.39	23.04	10.44	25.92	18.45	42.21
Wisconsin.....	39.57	15.70	11.18	40.02	40.20	25.27	6.14	23.45	4.63	43.73
Minnesota.....	31.13	5.72	7.83	26.64	43.32	18.19	1.91	16.55	7.70	25.27
Iowa.....	33.85	6.83	.80	14.51	41.69	20.30	4.95	20.58	4.95	24.98
Missouri.....	32.21	7.27	10.53	14.15	45.25	18.14	6.24	19.88	10.16	29.22
North Dakota.....	11.45	2.41	6.02	2.41	25.30	3.61	.60	7.83	6.63	10.64
South Dakota.....	34.25	7.19	9.59	17.47	40.41	20.89	3.77	9.25	2.74	39.73
Nebraska.....	39.80	13.10	3.40	17.51	40.68	23.55	8.19	26.83	10.20	35.52
Kansas.....	31.69	10.14	10.07	17.14	29.02	11.94	5.74	14.01	9.54	21.35
Western Division:										
Montana.....	42.55	0	13.83	1.08	89.36	8.51	2.13	20.21	14.89	79.79
Wyoming.....	85.71	0	0	9	23.81	0	0	0	0	100.00
Colorado.....	46.89	24.61	10.02	14.25	42.49	17.10	4.92	26.17	11.66	18.91
New Mexico.....	24.43	0.87	2.29	.76	50.38	25.95	9.16	22.90	8.40	48.09
Arizona.....										
Utah.....	15.86	1.55	2.76	7.53	21.09	9.94	3.10	11.95	9.54	20.06
Nevada.....	64.10	2.56	10.26	2.56	64.10	38.40	12.82	5.13	0	5.13
Idaho.....	100.00	20.00	0	40.00	80.00	40.00	20.00			20.00
Washington.....	22.76	8.84	15.13	12.05	26.64	11.51	4.28	16.87	11.65	30.92
Oregon.....	45.60	9.50	15.72	20.55	46.46	16.75	3.11	20.90	10.19	29.19
California.....	38.17	5.45	27.36	16.88	48.86	30.64	6.24	28.98	12.52	50.85

TABLE 16.—Summary of statistics of private secondary schools.
EQUIPMENT AND INCOME.

State or Territory.	Libraries.		Grounds, buildings, scientific apparatus, etc.		State and municipal aid.	Tuition fees.	Income from other sources.	Total income from all sources.	
	Schools reporting.	Volumes.	Schools reporting.	Value.	Schools reporting.	Amount.		Schools reporting.	Amount.
United States.....	1,242	1,420,336	1,463	\$49,495,897	308	\$172,163	\$5,500,918	1,416	\$3,204,352
North Atlantic Division:									
Maine.....	27	34,390	28	692,200	22	15,612	38,764	82	79,213
New Hampshire.....	22	33,170	20	661,197	2	800	38,368	19	141,291
Vermont.....	21	20,846	22	854,900	4	2,349	66,358	23	125,530
Massachusetts.....	63	111,114	65	4,519,320	3	2,550	472,792	70	621,105
Rhode Island.....	7	15,300	6	418,000	1	7,000	48,097	8	86,282
Connecticut.....	34	84,306	34	1,263,400	3	2,700	148,350	36	220,812
New York.....	146	231,161	138	7,994,309	45	16,297	1,047,712	136	1,214,880
New Jersey.....	39	82,467	45	3,224,256	1	1,200	336,314	37	548,791
Pennsylvania.....	89	129,440	84	7,076,699	0	0	479,148	87	1,668,839
South Atlantic Division:									
Delaware.....	3	2,700	3	150,000	0	0	21,900	4	21,900
Maryland.....	24	45,633	22	1,528,075	5	6,800	123,070	23	208,920
District of Columbia.....	7	30,780	6	302,700	0	0	33,400	5	34,200
Virginia.....	33	20,845	60	652,900	4	1,435	150,207	61	171,065
West Virginia.....	6	5,025	7	115,800	0	0	13,515	6	22,539
North Carolina.....	49	26,183	80	616,840	12	2,451	106,572	80	124,665
South Carolina.....	18	13,142	37	395,750	18	6,353	46,322	31	64,262
Georgia.....	38	20,973	79	966,913	56	27,740	97,463	81	173,107
Florida.....	7	5,250	7	90,500	1	1,000	9,968	8	17,462
South Central Division:									
Kentucky.....	41	85,421	57	1,001,890	8	3,900	148,250	59	171,200
Tennessee.....	52	28,803	96	1,046,905	31	11,489	175,549	80	208,651
Alabama.....	25	18,039	44	467,300	20	4,648	71,962	47	84,940
Mississippi.....	40	13,967	59	327,700	35	15,268	63,767	53	88,363
Louisiana.....	23	22,849	23	291,500	1	500	64,972	19	65,600
Texas.....	53	34,079	58	1,665,100	17	17,068	157,456	53	184,374
Arkansas.....	23	6,214	30	217,550	0	8,923	35,942	27	43,613
Oklahoma.....	.....	.....	1	16,000	0	0	0	0	0
Indian Territory.....	3	887	4	64,000	1	10,000	10,100	4	32,300

TABLE 16.—Summary of statistics of private secondary schools—Continued.

EQUIPMENT AND INCOME—Continued.

State or Territory.	Libraries.		Grounds, buildings, scientific apparatus, etc.		State and municipal aid.		Tuition fees.		Income from other sources.	Total income from all sources.	
	Schools report- ing.	Volumes.	Schools report- ing.	Value.	Schools report- ing.	Amount.	Schools report- ing.	Amount.		Schools report- ing.	Amount.
North Central Division:											
Ohio.....	34	54,327	31	\$987,812	0	0	32	\$174,107	\$45,832	32	\$219,939
Indiana.....	17	33,129	14	314,200	2	\$1,150	14	25,584	9,710	14	35,444
Illinois.....	40	54,238	37	1,951,800	2	1,500	30	240,055	14,989	30	257,444
Michigan.....	12	10,065	10	1,657,889	0	0	9	61,574	6,140	9	70,714
Wisconsin.....	18	30,937	23	1,207,000	0	0	22	154,465	9,275	22	163,740
Minnesota.....	10	17,362	19	1,008,450	0	0	21	157,882	16,468	21	174,840
Iowa.....	28	26,965	28	1,675,000	0	0	29	74,794	12,342	29	87,136
Missouri.....	56	50,073	67	1,568,725	4	5,100	44	222,741	17,800	44	240,541
North Dakota.....	3	783	3	33,500	0	0	3	8,102	602	3	8,704
South Dakota.....	5	2,700	5	136,200	0	0	5	9,083	8,564	5	12,647
Nebraska.....	13	12,120	13	365,656	1	300	10	17,158	14,986	10	32,396
Kansas.....	17	18,200	18	746,385	0	0	16	31,348	11,000	16	42,408
Western Division:											
Montana.....	2	560	2	60,000	0	0	2	4,250	0	2	4,250
Wyoming.....	1	800	1	40,000	0	0	0	0	0	0	0
Colorado.....	6	10,723	4	350,000	0	0	4	21,860	12,687	4	34,277
New Mexico.....	3	2,180	4	97,000	0	0	4	4,900	8,600	4	8,600
Arizona.....	18	14,326	17	474,046	0	0	15	81,755	57,838	15	89,583
Utah.....	2	700	1	6,000	0	0	1	4,800	6,400	1	6,400
Nevada.....	2	700	1	6,000	0	0	1	4,800	6,400	1	6,400
Idaho.....	7	9,275	8	199,000	0	0	7	32,700	4,850	7	37,550
Washington.....	13	14,800	9	339,100	0	0	7	16,112	11,574	7	27,686
Oregon.....	38	36,409	35	1,701,500	0	0	32	206,502	20,087	34	226,589
California.....											

TABLE 17.—*Denominational schools included in the tables of private secondary schools.*
(See Table 18.)

	Nonsectarian.			Baptist.		Congrega- tional.			Episcopal.			Friends.			Lutheran.			
State or Territory.	Schools.	Instructors.	Students.	Schools.	Instructors.	Students.	Schools.	Instructors.	Students.	Schools.	Instructors.	Students.	Schools.	Instructors.	Students.	Schools.	Instructors.	Students.
United States.....	1,129	4,309	66,050	93	433	7,320	56	190	2,757	112	579	5,402	54	236	3,444	31	130	1,805
North Atlantic Division.	435	2,125	26,671	25	181	3,209	15	49	688	46	282	2,545	23	142	1,891	7	48	497
South Atlantic Division.	248	601	11,825	31	98	1,421	5	14	175	18	61	662	5	20	283	6	23	234
South Central Division.	276	738	15,325	23	83	1,240	6	20	372	10	39	337	3	8	112	1	1	31
North Central Division.	187	634	10,908	12	66	1,367	19	68	1,023	23	132	1,267	23	66	1,158	17	58	1,043
Western Division.	34	121	1,921	2	5	83	11	39	499	15	65	591	0	0	0	0	0	0
North Atlantic Division:																		
Maine.....	25	102	1,782	5	30	822	2	6	54	1	2	17	0	0	0	0	0	0
New Hampshire.....	16	56	1,018	3	25	289	3	11	179	3	35	376	0	0	0	0	0	0
Vermont.....	13	68	1,328	4	24	427	1	5	60	2	13	67	0	0	0	0	0	0
Massachusetts.....	75	405	4,484	2	13	223	6	23	352	4	34	351	0	0	0	0	0	0
Rhode Island.....	4	25	258	0	0	0	0	0	0	0	0	1	10	150	0	0	0	0
Connecticut.....	42	181	2,031	1	8	150	3	4	43	11	54	447	0	0	0	0	0	0
New York.....	135	689	7,851	4	24	297	0	0	13	87	806	3	16	217	3	12	125	125
New Jersey.....	44	183	2,300	2	21	363	0	0	4	13	127	4	11	164	0	0	0	0
Pennsylvania.....	81	416	5,619	4	36	638	0	0	8	44	354	15	105	1,360	4	36	372	372
South Atlantic Division:																		
Delaware.....	3	10	103	0	0	0	0	0	0	0	0	1	8	92	0	0	0	0
Maryland.....	19	80	964	0	0	0	0	0	0	5	19	151	3	10	151	1	2	25
District of Columbia.....	5	24	334	1	10	85	0	0	0	1	2	12	0	0	0	0	0	0
Virginia.....	57	357	2,320	8	24	325	0	0	0	3	9	91	0	0	0	2	6	71
West Virginia.....	2	4	55	1	2	24	0	0	0	0	0	0	0	0	0	0	0	0
North Carolina.....	70	181	3,561	8	17	321	2	5	78	7	24	281	1	2	40	3	13	138
South Carolina.....	27	66	1,084	2	6	68	0	0	0	2	7	127	0	0	0	0	0	0
Georgia.....	61	353	3,398	11	39	598	3	9	97	0	0	0	0	0	0	0	0	0
Florida.....	4	16	206	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Central Division:																		
Kennecoy.....	39	91	1,462	1	1	30	1	2	22	3	4	58	0	0	0	0	0	0
Tennessee.....	66	373	3,472	5	18	275	1	4	103	3	18	106	2	6	88	0	0	0
Alabama.....	43	117	2,251	4	10	175	2	5	91	2	7	74	0	0	0	1	1	31
Mississippi.....	43	92	2,055	6	12	203	0	0	0	1	5	49	0	0	0	0	0	0
Louisiana.....	15	49	705	3	5	91	0	0	0	1	5	50	0	0	0	0	0	0
Texas.....	45	154	3,953	5	34	416	0	0	0	0	0	0	0	0	0	0	0	0
Arkansas.....	24	59	1,367	2	3	50	1	6	135	0	0	0	1	2	24	0	0	0
Indian Territory.....	1	3	60	0	0	0	1	3	21	0	0	0	0	0	0	0	0	0
North Central Division:																		
Ohio.....	29	148	3,519	0	0	0	0	0	0	4	30	259	2	8	144	0	0	0
Indiana.....	6	19	242	1	2	68	0	0	0	1	3	26	6	17	408	0	0	0
Illinois.....	20	119	1,948	2	14	260	4	11	131	4	24	173	1	2	32	1	3	95
Michigan.....	5	39	603	0	0	0	0	0	0	1	3	32	1	3	39	0	0	0
Wisconsin.....	9	42	625	0	0	0	1	2	21	4	24	246	0	0	0	2	10	296
Minnesota.....	8	31	322	1	6	158	1	4	150	2	19	192	0	0	0	5	16	163
Iowa.....	10	53	1,162	1	8	171	3	10	98	1	1	6	8	21	333	3	6	63
Missouri.....	45	168	2,680	4	11	204	2	8	202	1	4	32	0	0	0	2	10	213
North Dakota.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	116
South Dakota.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6	41
Nebraska.....	1	3	40	1	2	44	4	14	136	3	13	208	0	0	0	1	3	51
Kansas.....	4	12	267	1	16	333	3	16	194	1	6	33	5	15	202	0	0	0
Western Division:																		
Montana.....	1	2	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wyoming.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Colorado.....	0	0	0	0	0	0	1	5	67	2	8	89	0	0	0	0	0	0
New Mexico.....	0	0	0	0	0	0	2	6	62	0	0	0	0	0	0	0	0	0
Utah.....	1	4	25	0	0	0	4	8	145	1	6	50	0	0	0	0	0	0
Nevada.....	0	0	0	0	0	0	0	0	0	1	4	29	0	0	0	0	0	0
Idaho.....	0	0	0	0	0	0	0	0	0	1	1	5	0	0	0	0	0	0
Washington.....	2	4	43	1	2	66	2	6	56	2	4	72	0	0	0	0	0	0
Oregon.....	2	6	109	0	0	0	1	8	109	2	17	123	0	0	0	0	0	0
California.....	28	105	1,109	1	3	17	1	6	60	6	25	223	0	0	0	0	0	0

TABLE 18.—*Denominational schools, number of teachers, and students—Continued.*

State or Territory.	Methodist.			Methodist Episcopal South.			Presbyterian.			Roman Catholic.			Other denominations.		
	Schools.	Instructors.	Students.	Schools.	Instructors.	Students.	Schools.	Instructors.	Students.	Schools.	Instructors.	Students.	Schools.	Instructors.	Students.
United States	57	322	5,781	50	201	4,333	97	333	4,889	254	1,062	13,127	48	207	3,727
North Atlantic Division...	17	163	2,949	0	0	0	19	83	1,153	61	289	3,633	14	67	1,041
South Atlantic Division...	19	72	1,336	9	33	787	30	95	1,306	28	121	1,356	7	17	400
South Central Division...	13	51	779	31	113	2,593	22	66	1,044	42	186	2,164	8	23	462
North Central Division...	6	32	609	9	52	948	20	75	1,103	77	305	3,992	11	39	493
Western Division.....	2	4	48	1	3	15	6	19	277	46	161	1,982	8	61	1,331
North Atlantic Division:															
Maine.....	1	9	246	0	0	0	0	0	0	2	7	80	0	0	0
New Hampshire.....	0	0	0	0	0	0	0	0	0	0	0	0	1	3	30
Vermont.....	2	20	347	0	0	0	0	0	0	3	16	71	2	11	142
Massachusetts.....	1	14	266	0	0	0	0	0	0	3	15	153	3	14	206
Rhode Island.....	1	12	211	0	0	0	0	0	0	3	16	200	0	0	0
Connecticut.....	1	2	11	0	0	0	0	0	0	3	20	139	0	0	0
New York.....	7	51	707	0	0	0	3	6	122	31	141	2,030	2	11	115
New Jersey.....	2	32	487	0	0	0	7	43	580	5	20	341	1	5	97
Pennsylvania.....	2	23	674	0	0	0	9	34	457	11	54	619	5	23	451
South Atlantic Division:															
Delaware.....	1	7	128	0	0	0	1	2	50	0	0	0	0	0	0
Maryland.....	1	11	179	0	0	0	0	0	0	7	45	464	0	0	0
District of Columbia...	0	0	0	0	0	0	0	0	0	7	36	456	0	0	0
Virginia.....	2	10	135	1	2	70	9	27	347	1	1	18	3	9	184
West Virginia.....	1	3	84	1	6	239	2	6	104	1	5	40	1	4	85
North Carolina.....	6	23	508	1	3	84	8	28	397	2	5	113	3	4	131
South Carolina.....	4	10	175	0	0	0	8	23	281	2	8	100	0	0	0
Georgia.....	4	8	177	4	15	288	2	9	127	4	14	105	0	0	0
Florida.....	0	0	0	2	7	106	0	0	0	4	7	60	0	0	0
South Central Division:															
Kentucky.....	1	3	4	5	17	318	8	26	358	12	49	595	3	10	252
Tennessee.....	5	16	250	11	38	990	3	6	104	3	23	351	2	4	73
Alabama.....	1	2	32	0	0	0	0	0	0	2	7	61	0	0	0
Mississippi.....	3	4	79	3	10	228	5	19	248	2	4	65	2	7	119
Louisiana.....	0	0	0	2	3	68	0	0	0	15	66	663	1	2	18
Texas.....	1	17	257	6	31	727	4	12	246	7	35	414	0	0	0
Arkansas.....	2	9	120	2	9	172	1	1	11	0	0	0	0	0	0
Oklahoma.....	0	0	0	0	0	0	0	0	0	1	2	15	0	0	0
Indian Territory.....	0	0	0	2	5	90	1	2	77	0	0	0	0	0	0
North Central Division:															
Ohio.....	1	6	68	0	0	0	4	11	189	11	44	460	1	2	57
Indiana.....	0	0	0	0	0	0	1	8	54	7	24	514	0	0	0
Illinois.....	0	0	0	3	21	427	3	12	118	11	41	531	2	8	54
Michigan.....	1	2	60	0	0	0	1	1	11	8	23	366	0	0	0
Wisconsin.....	1	8	199	0	0	0	2	4	93	8	35	443	0	0	0
Minnesota.....	0	0	0	0	0	0	0	0	0	7	31	478	0	0	0
Iowa.....	0	0	0	1	9	173	1	4	90	8	32	329	2	8	77
Missouri.....	2	12	291	5	22	348	5	15	295	8	44	409	4	12	205
North Dakota.....	0	0	0	0	0	0	0	0	0	1	4	50	0	0	0
South Dakota.....	0	0	0	0	0	0	0	0	0	2	5	71	0	0	0
Nebraska.....	1	4	51	0	0	0	2	12	144	2	10	70	0	0	0
Kansas.....	0	0	0	0	0	0	1	8	109	4	12	211	2	9	100
Western Division:															
Montana.....	0	0	0	0	0	0	0	0	0	3	4	59	0	0	0
Wyoming.....	0	0	0	0	0	0	0	0	0	1	4	21	0	0	0
Colorado.....	0	0	0	0	0	0	1	3	66	3	17	164	0	0	0
New Mexico.....	0	0	0	0	0	0	0	0	0	3	8	69	0	0	0
Utah.....	1	1	13	0	0	0	4	9	141	2	8	170	6	51	1,196
Nevada.....	0	0	0	0	0	0	0	0	0	1	1	10	0	0	0
Idaho.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Washington.....	0	0	0	0	0	0	0	0	0	5	27	510	0	0	0
Oregon.....	1	3	35	0	0	0	0	0	0	6	14	147	1	2	56
California.....	0	0	0	1	3	15	1	7	70	22	78	832	1	8	79

TABLE 19.—Averages for public and private high schools.

TEACHERS AND STUDENTS.

State or Territory.	Public high schools.					Private secondary schools.				
	Teachers to each school.	Secondary students to a school.	Secondary students to a teacher.	Elementary pupils to a school.	Graduates to each school.	Teachers to each school.	Secondary students to a school.	Secondary students to a teacher.	Elementary pupils to a school.	Graduates to each school.
United States.....	3.1	73	24	147	9.4	4.0	60	15	48	5.6
North Atlantic Division.....	3.7	89	24	122	12.4	5.2	67	13	37	7.8
South Atlantic Division.....	2.8	60	22	111	6.5	3.1	49	16	48	3.6
South Central Division.....	2.5	54	22	181	4.5	3.1	57	18	57	2.7
North Central Division.....	2.9	69	24	156	9.1	4.3	71	16	48	6.6
Western Division.....	3.3	84	25	182	10.8	3.8	49	13	70	4.6
North Atlantic Division:										
Maine.....	2.4	57	24	20	7.8	4.3	83	19	10	9.5
New Hampshire.....	2.9	65	23	15	9.0	5.0	73	15	20	1.0
Vermont.....	2.3	53	23	97	8.0	5.8	90	16	12	9.0
Massachusetts.....	4.7	120	26	9	18.7	5.5	64	12	14	7.9
Rhode Island.....	6.5	159	24	5	16.7	7.0	91	13	83	1.0
Connecticut.....	3.9	98	25	58	12.8	4.4	46	12	18	6.2
New York.....	3.9	88	22	232	10.2	5.2	61	12	60	7.5
New Jersey.....	3.9	92	24	313	13.3	4.8	65	14	35	7.6
Pennsylvania.....	3.2	81	25	129	12.4	5.5	76	14	39	7.6
South Atlantic Division:										
Delaware.....	2.9	72	24	127	9.3	4.5	62	14	34	5.5
Maryland.....	3.2	69	23	129	7.4	4.6	54	12	29	4.7
District of Columbia.....	22.2	488	22	0	104.0	5.1	63	12	56	4.4
Virginia.....	2.3	47	21	100	4.9	2.8	39	14	23	2.7
West Virginia.....	1.9	39	20	153	5.4	3.3	65	19	54	2.4
North Carolina.....	2.2	52	24	246	4.5	2.7	51	18	42	2.5
South Carolina.....	2.6	51	20	131	3.0	2.7	41	15	53	6.3
Georgia.....	2.4	57	24	79	5.3	2.8	54	19	82	3.6
Florida.....	2.4	40	16	103	2.0	3.0	37	12	85	4.6
South Central Division:										
Kentucky.....	3.2	79	25	157	8.2	2.8	43	15	40	3.3
Tennessee.....	2.1	47	22	142	4.4	3.1	57	19	57	2.6
Alabama.....	2.0	39	19	124	2.4	2.7	49	18	55	3.3
Mississippi.....	2.4	45	19	152	3.5	2.4	47	20	60	8.9
Louisiana.....	5.0	88	18	88	16.6	3.7	46	12	57	4.0
Texas.....	2.7	60	22	205	3.5	4.2	88	21	72	4.6
Arkansas.....	2.1	52	25	374	5.0	2.7	54	21	51	2.2
Oklahoma.....	1.7	30	18	716	.....	2.0	15	7	25	.....
Indian Territory.....	2.0	26	13	143	2.0	2.6	50	19	145	11.0
North Central Division:										
Ohio.....	2.6	65	25	123	8.7	4.8	90	19	36	7.3
Indiana.....	2.6	63	24	148	8.0	3.3	64	19	61	5.4
Illinois.....	3.5	87	25	107	11.8	5.0	62	13	54	7.1
Michigan.....	3.2	80	25	238	9.7	4.2	65	16	148	7.7
Wisconsin.....	2.5	59	24	102	7.9	4.6	71	15	40	8.2
Minnesota.....	4.0	90	23	189	10.4	4.5	61	14	47	7.8
Iowa.....	2.8	61	22	161	9.4	4.0	60	16	52	7.9
Missouri.....	3.3	88	27	266	11.5	3.9	63	16	36	5.1
North Dakota.....	2.1	32	15	54	4.0	2.7	55	21	68	4.6
South Dakota.....	1.8	38	21	70	4.0	4.2	49	12	39	4.0
Nebraska.....	2.4	53	22	180	0.5	4.1	53	13	33	4.2
Kansas.....	2.4	58	25	153	7.5	4.5	71	16	29	7.4
Western Division:										
Montana.....	2.4	48	20	427	5.8	1.5	24	16	65	1.2
Wyoming.....	2.5	80	32	512	9.0	4.0	21	5	65	5.0
Colorado.....	4.0	84	21	146	9.8	4.7	55	12	105	3.6
New Mexico.....	1.3	24	18	91	2.7	2.8	26	9	33	1.4
Arizona.....	1.7	46	28	65	8.0	.....	.....	.....	.....	.....
Utah.....	6.5	149	23	0	12.0	4.6	92	20	90	5.5
Nevada.....	1.9	56	30	175	8.6	2.5	19	8	56	4.0
Idaho.....	1.8	36	20	378	5.4	1.0	5	5	5	.....
Washington.....	2.8	67	24	186	7.8	3.6	62	17	28	8.6
Oregon.....	2.5	82	33	310	11.8	3.8	45	12	42	3.2
California.....	4.0	111	28	120	14.8	3.9	39	11	79	5.6

TABLE 20.—Averages and percentages for public and private high schools—teachers, students, and studies.

Geographical divisions.	Public and private high schools.	3	4	5	6	7	8	9	10	11	12	13	14	Preparing for college.			Graduates to number of secondary students.
														Classical course.	Scientific course.	Total.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
United States.....	Public.....	3,904	12,120	280,274	3.1	73	24	9.4	147	47.34	52.66	40.45	59.55	7.87	6.43	14.30	Per ct.
	Private.....	1,982	8,009	118,045	4.0	60	15	5.6	48	46.64	53.36	50.39	49.61	16.36	9.55	25.91	12.90
	Both.....	5,946	20,129	407,919	3.4	69	20	8.2	114	47.06	52.93	43.39	56.61	10.34	7.33	17.67	11.88
North Atlantic Division.....	Public.....	1,063	3,809	94,287	3.7	89	24	12.4	123	40.75	59.25	41.14	58.86	9.58	5.73	15.31	13.93
	Private.....	662	2,429	44,283	5.2	67	13	7.8	87	46.34	53.66	52.04	47.96	18.25	11.37	29.62	11.67
	Both.....	1,725	7,339	138,570	4.2	83	19	10.6	89	43.37	56.63	44.62	55.38	12.35	7.53	19.88	13.21
South Atlantic Division.....	Public.....	284	812	17,737	2.8	60	22	6.5	111	49.26	50.74	40.80	59.20	12.31	8.46	15.77	10.84
	Private.....	406	1,245	19,785	3.1	49	16	3.8	48	46.18	53.82	50.45	49.55	19.36	7.43	26.79	7.81
	Both.....	700	2,057	37,522	2.9	54	19	4.8	75	47.40	52.60	45.89	54.11	16.03	6.85	21.58	8.98
South Central Division.....	Public.....	380	977	21,162	2.1	54	22	4.5	181	53.71	46.28	41.75	58.25	14.36	8.65	23.01	8.80
	Private.....	435	1,293	24,459	3.1	57	18	3.7	116	46.30	53.61	47.70	52.28	16.03	7.87	23.70	9.57
	Both.....	824	2,305	45,621	2.8	55	20	4.0	118	49.50	50.50	44.97	55.03	15.28	8.82	23.32	9.18
North Central Division.....	Public.....	843	5,849	141,338	2.9	69	24	9.1	158	49.84	50.06	39.83	60.17	15.36	8.39	11.98	13.18
	Private.....	2,354	7,370	123,871	4.3	71	16	6.3	148	47.80	52.20	51.68	48.32	12.25	6.84	21.09	9.79
	Both.....	2,397	7,370	123,871	4.3	69	22	8.8	140	49.30	50.70	42.51	59.50	6.35	8.46	13.29	12.69
Western Division.....	Public.....	175	583	14,750	3.3	84	25	10.8	182	51.95	48.05	41.07	58.93	6.41	8.46	13.87	12.81
	Private.....	125	478	6,147	3.8	49	13	4.6	70	47.07	52.93	43.75	56.25	10.41	13.49	23.90	9.45
	Both.....	300	1,061	20,897	3.5	70	20	8.2	135	49.76	50.24	41.86	58.14	7.59	10.64	18.23	11.82

TABLE 20.—Averages and percentages for public and private high schools, etc.—Continued.

Geographical divisions.	1	Public and private high schools.		Graduating classes preparing for college.		Graduates.		College preparatory graduates.		Secondary students studying—								General history.
		2	Per cent.	Male.	Female.	Male.	Female.	Latin.	Greek.	French.	German.	Algebra.	Geometry.	Trigonometry.	Physics.	Chemistry.		
United States.....	1	Public.....	26.70	35.45	61.55	61.87	61.87	44.78	3.33	6.81	11.77	56.14	27.20	2.83	23.29	10.31	30.48	
		Private.....	43.04	53.27	46.63	67.90	32.10	40.77	9.04	18.85	15.25	44.37	20.54	5.93	20.91	10.32	34.07	
		Both.....	30.92	40.47	59.53	54.76	45.24	43.30	4.90	10.31	12.78	52.71	23.25	3.80	24.02	10.31	35.78	
North Atlantic Division.....	1	Public.....	21.63	36.01	63.09	57.13	42.87	43.53	6.70	14.40	13.01	51.37	26.37	2.20	23.76	11.54	35.48	
		Private.....	50.36	58.73	43.28	75.57	24.43	44.07	12.78	29.93	20.03	40.17	21.23	4.95	19.71	10.09	36.82	
		Both.....	29.75	42.51	57.40	65.94	53.42	43.91	8.04	18.36	15.45	47.81	24.74	3.07	22.48	11.37	35.83	
South Atlantic Division.....	1	Public.....	27.35	31.15	68.85	46.58	53.42	63.68	3.81	8.56	12.55	64.96	33.59	0.46	30.75	7.39	31.68	
		Private.....	43.68	53.35	46.65	58.54	41.46	47.44	7.77	18.39	9.73	51.99	18.47	5.05	19.83	9.56	36.62	
		Both.....	34.36	40.68	59.32	53.11	40.89	56.12	5.89	13.74	11.07	57.86	25.62	5.60	25.05	8.53	43.74	
South Central Division.....	1	Public.....	28.64	44.55	55.45	66.68	43.32	51.74	1.70	4.09	3.82	76.02	33.19	7.48	34.20	11.57	41.50	
		Private.....	38.64	44.55	55.45	66.68	43.32	36.22	6.00	9.21	6.20	56.64	22.00	7.76	24.57	9.38	29.98	
		Both.....	32.89	37.67	62.33	50.36	49.64	43.42	3.47	6.83	4.55	59.63	27.24	7.61	29.03	10.04	35.31	
North Central Division.....	1	Public.....	29.34	34.85	65.15	43.63	56.37	42.25	1.82	2.10	12.00	55.39	23.27	2.33	23.93	9.05	32.28	
		Private.....	39.80	52.15	47.85	59.53	40.47	35.12	7.98	11.07	20.09	40.97	19.59	6.99	20.13	10.46	31.13	
		Both.....	30.51	38.79	63.21	45.95	54.05	41.22	2.28	3.47	13.26	53.30	24.45	3.00	23.38	9.25	32.12	
Western Division.....	1	Public.....	34.39	39.36	60.64	52.31	47.69	44.25	2.85	4.34	12.17	63.24	34.09	2.53	28.82	16.17	57.55	
		Private.....	39.93	50.95	49.05	71.12	28.88	31.38	6.26	15.80	13.11	38.36	19.82	4.78	21.21	11.11	35.90	
		Both.....	35.69	42.09	57.91	57.28	42.74	40.46	3.85	7.70	12.45	55.92	30.31	3.19	26.58	14.68	51.18	

TABLE 21.—*Summary of statistics of public and private high schools.*

SCHOOLS, INSTRUCTORS, AND STUDENTS.

State or Territory.	Number of schools.	Second-ary students.	Male.		Female.		Classical preparatory.	
			Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
United States.....	5,946	407,019	176,988	43.39	230,931	56.61	42,180	10.34
North Atlantic Division...	1,725	138,570	61,833	44.62	76,737	55.38	17,110	12.35
South Atlantic Division...	700	37,522	17,217	45.89	20,305	54.11	6,014	16.03
South Central Division...	824	45,621	20,516	44.97	25,105	55.03	6,059	15.25
North Central Division...	2,397	165,309	68,675	42.51	96,634	57.49	10,511	6.35
Western Division.....	300	20,897	8,747	41.86	12,150	58.14	1,586	7.59
North Atlantic Division:								
Maine.....	146	9,282	4,170	44.92	5,112	55.08	1,573	16.94
New Hampshire.....	70	4,732	2,383	50.36	2,349	49.64	843	18.66
Vermont.....	74	4,956	2,439	49.21	2,517	50.79	523	10.55
Massachusetts.....	304	31,272	13,959	44.64	17,313	55.36	5,150	16.47
Rhode Island.....	22	2,880	1,249	43.37	1,631	56.63	518	17.99
Connecticut.....	117	8,307	3,756	45.22	4,551	54.78	1,191	14.34
New York.....	498	38,383	16,465	42.90	21,918	57.10	3,581	9.30
New Jersey.....	132	10,250	5,190	50.64	5,060	49.36	1,288	12.57
Pennsylvania.....	362	28,508	12,222	42.87	16,286	57.13	2,403	8.42
South Atlantic Division:								
Delaware.....	18	1,232	522	42.37	710	57.63	162	13.15
Maryland.....	81	5,049	2,078	41.16	2,971	58.84	354	7.01
District of Columbia...	18	2,841	1,135	39.95	1,706	60.05	332	11.90
Virginia.....	149	6,350	2,987	47.04	3,363	52.96	1,029	16.20
West Virginia.....	25	1,206	467	38.72	739	61.28	124	10.28
North Carolina.....	124	6,323	3,358	53.11	2,965	46.89	1,313	20.77
South Carolina.....	81	3,678	1,896	46.33	1,982	53.67	713	19.39
Georgia.....	177	9,797	4,520	46.23	5,268	53.77	1,827	18.65
Florida.....	27	1,046	445	42.54	601	57.46	160	15.30
South Central Division:								
Kentucky.....	115	6,459	3,048	47.19	3,411	52.81	972	15.05
Tennessee.....	183	9,662	4,428	45.83	5,234	54.17	1,227	12.90
Alabama.....	92	4,161	2,009	48.28	2,152	51.72	742	17.83
Mississippi.....	131	6,034	2,865	47.48	3,169	52.52	1,175	19.64
Louisiana.....	45	2,475	726	29.33	1,749	70.67	238	9.61
Texas.....	189	13,244	5,677	42.86	7,567	57.14	1,921	14.50
Arkansas.....	58	3,182	1,565	49.18	1,617	50.82	654	20.56
Oklahoma.....	4	104	51	29.81	73	70.19	7	6.73
Indian Territory.....	7	300	167	55.67	133	44.33	13	4.33
North Central Division:								
Ohio.....	454	30,775	13,496	43.85	17,279	56.15	1,876	6.09
Indiana.....	226	14,323	5,767	40.26	8,556	59.74	723	5.04
Illinois.....	323	26,779	9,872	36.87	16,907	63.13	1,664	6.21
Michigan.....	256	20,235	8,296	41.00	11,939	59.00	738	3.64
Wisconsin.....	197	11,919	5,526	46.36	6,393	53.64	519	4.35
Minnesota.....	111	9,288	4,044	43.54	5,244	56.46	373	4.01
Iowa.....	294	18,142	7,602	41.90	10,540	58.10	1,044	5.75
Missouri.....	198	15,456	6,502	42.07	8,954	57.93	1,363	8.81
North Dakota.....	15	548	243	44.34	305	55.66	76	13.87
South Dakota.....	25	1,020	406	39.80	614	60.20	141	13.83
Nebraska.....	148	7,872	3,264	46.45	4,608	53.55	941	11.95
Kansas.....	150	8,952	3,657	40.85	5,295	59.15	1,053	11.76
Western Division:								
Montana.....	18	765	293	38.30	472	61.70	98	12.81
Wyoming.....	3	180	79	43.89	101	56.11	0	0
Colorado.....	41	3,228	1,355	41.98	1,873	58.02	203	6.26
New Mexico.....	11	273	128	46.89	145	53.11	20	7.32
Arizona.....	3	139	50	35.97	89	64.03	5	3.59
Utah.....	21	2,037	1,070	52.53	967	47.47	67	3.28
Nevada.....	10	489	167	34.15	322	65.85	25	5.11
Idaho.....	6	165	77	41.62	108	58.38	26	14.05
Washington.....	35	2,287	809	35.37	1,478	64.63	199	8.70
Oregon.....	25	1,559	678	43.49	881	56.51	136	8.72
California.....	127	9,755	4,041	41.42	5,714	58.58	807	8.27

TABLE 22.—Summary of statistics of public and private high schools.

STUDENTS AND COURSES OF STUDY.

State or Territory.	Scientific preparatory		Total college preparatory.		Graduates in 1894.		Graduates prepared for college.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
United States.....	29,936	7.33	72,116	17.67	48,479	11.88	14,988	30.92
North Atlantic Division...	10,442	7.53	27,552	19.88	18,302	13.21	5,444	29.75
South Atlantic Division...	2,083	5.55	8,097	21.58	3,370	8.98	1,158	34.36
South Central Division...	3,705	8.12	10,664	23.37	3,363	7.37	1,106	32.89
North Central Division...	11,482	6.94	21,993	13.29	20,973	12.69	6,398	30.51
Western Division.....	2,224	10.64	8,810	18.23	2,471	11.82	882	35.69
North Atlantic Division:								
Maine.....	329	3.54	1,902	20.48	1,195	12.87	352	29.46
New Hampshire.....	422	8.91	1,305	27.57	655	13.84	227	34.66
Vermont.....	540	10.90	1,063	21.45	660	13.32	248	37.58
Massachusetts.....	1,942	6.20	7,092	22.67	4,670	14.93	1,255	26.87
Rhode Island.....	192	6.66	710	24.65	312	10.83	129	41.85
Connecticut.....	712	8.57	1,003	22.91	1,091	13.13	382	35.01
New York.....	2,940	7.66	6,521	16.96	4,534	11.81	1,532	33.79
New Jersey.....	1,319	12.87	2,607	25.44	1,364	13.31	438	32.11
Pennsylvania.....	2,046	7.17	4,449	15.59	3,821	13.40	881	23.06
South Atlantic Division:								
Delaware.....	31	2.51	193	15.66	145	11.77	35	24.19
Maryland.....	327	6.47	681	13.48	501	9.92	130	25.96
District of Columbia...	109	3.83	441	15.52	478	16.83	101	21.13
Virginia.....	294	4.63	1,323	20.83	544	8.56	137	25.18
West Virginia.....	26	2.15	1,272	12.43	109	9.03	29	26.61
North Carolina.....	430	6.80	1,743	27.57	331	5.48	178	53.78
South Carolina.....	270	7.34	983	26.73	393	10.69	192	48.86
Georgia.....	514	5.24	2,341	23.89	789	7.87	325	41.19
Florida.....	82	7.83	242	23.13	80	7.64	31	38.75
South Central Division:								
Kentucky.....	441	6.82	1,413	21.87	582	9.01	158	26.53
Tennessee.....	733	7.58	1,970	20.38	721	7.46	202	28.02
Alabama.....	278	5.30	1,020	22.13	269	6.46	91	33.83
Mississippi.....	623	10.32	1,798	29.06	485	8.03	240	49.48
Louisiana.....	110	2.80	348	12.41	807	11.85	76	24.76
Texas.....	970	7.32	2,891	21.82	743	5.61	234	31.49
Arkansas.....	497	15.62	1,151	36.17	197	6.19	70	35.53
Oklahoma.....			7	6.73	0	0	0	0
Indian Territory.....	53	17.67	66	22.00	59	19.67	35	59.39
North Central Division:								
Ohio.....	1,632	5.30	3,508	11.39	3,881	12.61	891	22.96
Indiana.....	561	3.91	1,284	8.95	1,737	12.13	479	27.58
Illinois.....	1,996	7.45	3,660	13.66	3,578	13.36	941	26.80
Michigan.....	1,691	8.35	2,429	11.99	2,449	12.10	812	33.16
Wisconsin.....	666	5.58	1,185	9.93	1,560	13.09	415	26.60
Minnesota.....	1,582	17.03	1,935	21.04	1,089	11.72	485	44.54
Iowa.....	933	5.14	1,977	10.89	2,700	14.88	844	30.35
Missouri.....	1,255	8.12	2,618	16.93	1,779	11.51	538	30.24
North Dakota.....	70	12.77	146	26.64	62	11.31	38	61.29
South Dakota.....	75	7.35	216	21.17	100	9.80	31	31.00
Nebraska.....	453	5.75	1,394	17.70	921	11.70	468	50.81
Kansas.....	568	6.34	1,621	18.10	1,117	12.48	456	40.82
Western Division:								
Montana.....	68	8.88	166	21.60	86	11.24	17	19.77
Wyoming.....	2	1.11	2	1.11	23	12.75	8	34.78
Colorado.....	388	12.02	591	18.28	358	11.09	129	36.04
New Mexico.....	45	16.48	65	23.80	23	8.42	15	65.22
Arizona.....	10	7.19	15	10.78	24	17.27	5	20.83
Utah.....	112	5.49	179	8.77	130	6.39	83	25.38
Nevada.....	20	4.09	45	9.20	77	15.75	13	16.88
Idaho.....	11	5.94	37	19.90	27	14.59	16	59.26
Washington.....	171	7.47	370	16.17	222	9.70	56	25.23
Oregon.....	134	8.59	270	17.31	184	11.80	60	32.61
California.....	1,263	12.92	2,070	21.19	1,317	13.50	530	40.24

TABLE 23.—*Summary of statistics of public and private high schools.*

STUDENTS IN CERTAIN STUDIES.

State or Territory.	Latin.		Greek.		French.		German.		Algebra.	
	Num- ber.	Per- cent.	Num- ber.	Per- cent.	Num- ber.	Per- cent.	Num- ber.	Per- cent.	Num- ber.	Per- cent.
United States.....	177,898	43.59	20,353	4.99	42,072	10.31	52,152	12.78	215,023	52.71
North Atlantic Division.....	60,822	43.91	11,979	8.64	26,436	18.36	21,398	15.45	66,221	47.81
South Atlantic Division.....	20,681	55.12	2,213	5.89	5,156	13.74	4,152	11.07	21,809	57.86
South Central Division.....	19,807	43.42	1,583	3.47	3,119	6.83	2,079	4.55	27,263	59.63
North Central Division.....	69,132	41.42	3,773	2.28	5,750	3.47	21,922	13.26	88,104	53.30
Western Division.....	8,456	40.46	805	3.85	1,611	7.70	2,601	12.45	11,685	55.92
North Atlantic Division:										
Maine.....	4,210	45.36	1,247	13.43	1,243	13.39	161	1.73	4,369	47.07
New Hampshire.....	2,620	55.37	708	14.96	1,051	22.73	160	3.38	2,081	43.98
Vermont.....	1,831	36.95	389	7.84	568	11.46	274	5.52	1,747	35.25
Massachusetts.....	15,790	50.49	3,502	11.20	11,046	35.32	2,737	8.75	11,988	38.33
Rhode Island.....	1,578	54.79	360	12.49	858	29.79	319	11.08	1,370	47.57
Connecticut.....	4,314	51.93	757	9.11	1,462	17.60	1,317	15.85	4,293	51.68
New York.....	13,645	35.55	2,538	6.61	5,828	15.19	8,102	21.11	16,924	44.09
New Jersey.....	4,081	39.82	1,048	10.22	1,890	18.44	3,308	32.27	6,545	63.85
Pennsylvania.....	12,753	44.73	1,430	5.01	2,490	8.73	5,020	17.61	16,904	59.30
South Atlantic Division:										
Delaware.....	849	68.91	19	1.54	177	14.37	64	5.19	732	59.42
Maryland.....	3,314	45.83	300	5.94	1,084	21.47	1,700	33.67	3,737	74.01
District of Columbia.....	1,616	58.88	297	10.45	612	21.54	764	26.89	1,355	47.69
Virginia.....	3,555	55.98	155	2.44	931	14.66	943	14.85	3,778	59.50
West Virginia.....	386	32.01	23	1.90	66	5.47	66	5.47	678	56.23
North Carolina.....	2,928	36.78	450	7.11	409	6.46	259	4.09	2,918	46.15
South Carolina.....	1,810	49.21	139	3.77	584	15.88	128	3.48	2,174	59.11
Georgia.....	5,049	57.66	809	8.25	1,235	12.61	192	1.96	5,850	59.71
Florida.....	574	54.88	21	2.00	58	5.54	36	3.44	587	56.12
South Central Division:										
Kentucky.....	3,450	53.41	448	6.93	329	5.09	744	11.52	4,033	62.44
Tennessee.....	4,216	43.63	381	3.94	290	3.00	294	3.04	5,194	53.76
Alabama.....	2,155	51.79	177	4.25	385	9.25	159	3.82	2,684	61.50
Mississippi.....	2,478	41.07	185	3.06	117	1.93	36	.59	3,240	53.79
Louisiana.....	908	36.69	41	1.65	1,602	64.73	43	1.73	1,296	52.28
Texas.....	5,183	39.13	256	1.93	295	2.22	634	4.78	8,451	63.81
Arkansas.....	1,272	39.98	91	2.86	97	3.04	136	4.27	2,013	63.26
Oklahoma.....	65	62.50	0	0	1	.76	15	14.42	99	95.10
Indian Territory.....	80	26.66	4	1.33	3	1.00	8	2.66	189	63.00
North Central Division:										
Ohio.....	15,074	48.98	892	2.89	924	3.00	3,585	11.65	17,812	57.88
Indiana.....	8,034	56.00	138	.96	218	1.52	1,455	10.16	8,264	57.70
Illinois.....	9,719	36.29	608	1.79	1,700	6.57	3,821	14.27	13,334	49.79
Michigan.....	6,490	32.67	410	2.02	807	3.98	3,432	16.96	9,671	47.79
Wisconsin.....	3,164	26.55	336	2.71	257	2.15	2,886	24.21	5,436	45.01
Minnesota.....	4,470	48.13	252	2.81	520	5.59	1,493	12.77	4,508	48.54
Iowa.....	6,684	36.84	211	1.16	71	.89	1,744	9.61	9,834	54.20
Missouri.....	5,939	38.42	490	3.24	816	5.27	1,651	10.68	8,977	58.08
North Dakota.....	334	60.95	4	.72	10	1.80	8	1.44	249	45.26
South Dakota.....	406	39.80	21	2.05	40	3.92	87	8.52	571	55.98
Nebraska.....	3,476	44.16	212	2.69	157	1.89	749	9.51	4,401	55.81
Kansas.....	4,342	48.50	199	2.22	170	1.89	1,011	11.29	5,048	56.39
Western Division:										
Montana.....	379	49.54	0	0	28	3.66	16	2.09	445	59.48
Wyoming.....	119	66.11	0	0	0	0	0	0	91	50.56
Colorado.....	1,857	57.53	237	7.34	281	8.70	839	25.99	1,761	54.55
New Mexico.....	74	27.11	9	3.29	3	1.09	3	1.09	198	61.54
Arizona.....	24	17.67	0	0	0	0	0	0	15	11.04
Utah.....	403	19.78	32	1.57	73	3.58	155	7.60	611	29.99
Nevada.....	103	21.06	1	.20	4	.81	9	1.63	433	88.55
Idaho.....	49	26.49	1	.54	0	0	2	1.08	104	56.22
Washington.....	702	30.69	102	4.46	136	5.94	277	12.11	1,051	45.95
Oregon.....	488	31.30	55	3.52	91	5.83	324	20.78	856	61.32
California.....	4,258	43.65	368	3.77	995	10.20	970	10.01	6,051	62.03

TABLE 24.—Summary of statistics of public and private high schools.

STUDENTS IN CERTAIN STUDIES.

State or Territory.	Geometry.		Trigonometry.		Physics.		Chemistry.		History.	
	Num- ber.	Per cent.	Num- ber.	Per cent.	Num- ber.	Per cent.	Num- ber.	Per cent.	Num- ber.	Per cent.
United States.....	103,054	25.23	15,500	3.80	97,974	21.02	42,060	10.31	145,939	35.78
North Atlantic Division..	34,264	24.74	4,262	3.07	31,130	22.48	15,745	11.37	49,625	35.83
South Atlantic Division..	9,612	25.62	2,125	5.66	9,398	25.05	3,201	8.53	16,412	43.74
South Central Division...	12,427	27.24	3,481	7.61	13,246	29.03	4,742	10.64	16,115	35.31
North Central Division...	46,417	24.45	4,965	3.00	38,645	23.38	15,304	9.25	53,092	32.12
Western Division.....	6,334	30.31	667	3.19	5,555	26.58	3,068	14.68	10,695	51.18
North Atlantic Division:										
Maine.....	2,086	22.47	65	2.70	1,927	20.76	849	9.14	2,557	27.55
New Hampshire.....	1,127	23.92	138	2.96	1,116	23.58	596	12.60	1,628	34.40
Vermont.....	942	19.01	45	1.90	753	15.19	362	7.30	1,146	23.12
Massachusetts.....	7,510	24.04	470	1.50	6,790	21.71	4,111	13.15	13,211	42.24
Rhode Island.....	774	26.87	74	2.56	633	21.98	295	10.24	1,475	51.22
Connecticut.....	2,178	26.28	313	3.76	1,907	22.96	789	9.49	2,939	35.38
New York.....	8,947	23.31	1,319	3.43	6,283	16.37	3,411	8.88	11,590	30.20
New Jersey.....	2,924	28.53	627	6.11	2,905	29.22	1,323	12.91	4,206	41.16
Pennsylvania.....	7,767	27.24	1,211	4.24	8,766	30.75	4,009	14.06	10,870	38.13
South Atlantic Division:										
Delaware.....	387	31.41	41	3.32	363	29.46	171	13.88	402	32.63
Maryland.....	2,776	54.98	484	9.58	2,357	46.66	427	8.45	3,399	67.32
District of Columbia...	709	24.96	128	4.50	560	19.71	282	9.92	1,523	53.61
Virginia.....	1,323	20.83	369	5.81	1,610	25.35	538	8.47	3,051	48.05
West Virginia.....	236	19.57	48	3.98	231	19.15	65	5.39	484	40.13
North Carolina.....	727	11.47	121	1.91	962	15.21	344	5.44	1,921	30.38
South Carolina.....	704	19.14	79	2.14	916	24.91	218	5.92	1,647	44.78
Georgia.....	2,451	25.02	804	8.20	2,070	21.13	980	10.01	3,545	36.19
Florida.....	299	28.59	51	4.87	329	31.45	182	17.40	540	51.62
South Central Division:										
Kentucky.....	1,801	27.82	785	12.15	1,559	24.14	952	11.71	2,585	40.02
Tennessee.....	2,101	21.74	605	6.26	2,230	23.08	990	9.31	3,073	31.80
Alabama.....	1,241	29.82	411	9.87	1,253	30.07	499	11.91	1,471	28.08
Mississippi.....	1,177	19.51	414	6.86	2,182	36.16	403	6.67	1,764	29.23
Louisiana.....	698	28.20	135	5.45	726	29.33	518	20.93	1,461	59.03
Texas.....	4,495	33.94	936	7.06	4,525	34.17	1,223	9.23	4,722	35.65
Arkansas.....	777	24.42	142	4.46	630	19.80	198	6.22	831	26.12
Oklahoma.....	41	39.42	7	6.73	20	19.23	3	2.88	71	68.27
Indian Territory.....	96	32.00	46	15.33	121	40.33	46	15.33	137	45.06
North Central Division:										
Ohio.....	8,559	27.81	1,928	6.26	6,868	22.32	3,081	10.01	9,277	30.14
Indiana.....	3,638	25.40	432	3.01	4,000	27.93	1,511	10.55	5,010	34.96
Illinois.....	6,745	25.19	509	2.12	6,417	23.96	2,903	10.81	8,719	32.56
Michigan.....	4,046	19.99	312	1.54	4,198	20.75	1,930	9.56	6,258	30.93
Wisconsin.....	2,616	21.95	173	1.45	2,542	19.65	565	4.23	3,456	29.00
Minnesota.....	2,283	24.58	76	1.81	1,736	18.60	773	8.32	2,842	30.60
Iowa.....	4,241	23.38	381	2.10	4,367	24.07	1,338	7.37	5,893	32.44
Missouri.....	3,758	24.31	673	4.35	3,874	25.06	1,617	10.46	4,344	34.58
North Dakota.....	126	22.99	2	3.36	98	17.88	44	7.92	172	31.37
South Dakota.....	230	22.55	25	2.45	216	21.18	32	3.13	372	36.47
Nebraska.....	2,035	25.85	205	2.60	2,114	26.85	874	10.59	2,798	35.54
Kansas.....	2,140	33.90	189	2.11	2,415	26.96	730	8.15	2,951	32.96
Western Division:										
Montana.....	134	17.52	19	2.48	212	27.69	116	15.16	249	32.55
Wyoming.....	30	21.67	20	11.11	23	12.78	0	0	68	37.78
Colorado.....	952	24.49	142	4.39	855	26.49	568	17.60	2,037	63.10
New Mexico.....	63	23.03	12	4.36	55	20.15	12	4.36	122	44.69
Arizona.....	12	8.83	0	0	12	8.83	3	2.20	79	56.84
Utah.....	292	14.33	61	2.99	272	13.35	176	8.64	436	21.40
Nevada.....	159	32.52	10	2.04	290	61.14	144	29.45	317	64.83
Idaho.....	48	25.95	1	5.4	49	26.40	0	0	39	21.08
Washington.....	516	22.56	60	2.62	509	22.26	208	9.09	712	31.13
Oregon.....	378	24.25	36	2.30	378	24.25	188	12.06	600	42.53
California.....	3,741	38.35	306	3.13	2,891	29.64	1,654	16.96	5,976	61.26

TABLE 25.—*Distribution of students receiving secondary instruction.*

State or Territory.	In public institutions.									
	In public high schools.				In preparatory departments of public universities and colleges.				Secondary students in public normal schools.	
	Male.	Female.	Total.		Male.	Female.	Total.		Male.	Female.
1	2	3	4		5	6	7		8	9
United States.....	117,202	172,072	289,274		4,053	1,368	5,441		2,032	5,259
North Atlantic Division.....	38,786	55,501	94,287		787	20	807		586	2,723
South Atlantic Division.....	7,236	10,501	17,737		859	128	987		253	517
South Central Division.....	8,815	12,327	21,162		776	304	1,080		475	503
North Central Division.....	56,287	85,051	141,338		953	443	1,396		615	1,434
Western Division.....	6,058	8,692	14,750		678	493	1,171		103	82
North Atlantic Division:										
Maine.....	2,673	3,608	6,281		0	0	0		10	10
New Hampshire.....	1,200	1,640	2,840		0	0	0		10	10
Vermont.....	1,063	1,421	2,514		0	0	0		10	10
Massachusetts.....	11,038	14,199	25,237		0	0	0		5	4
Rhode Island.....	771	1,290	2,061		0	0	0		0	0
Connecticut.....	2,511	2,975	5,486		0	0	0		0	0
New York.....	10,567	15,546	26,113		605	0	605		237	2,130
New Jersey.....	2,444	3,347	5,791		100	0	100		0	83
Pennsylvania.....	6,489	11,475	17,964		82	20	102		324	524
South Atlantic Division:										
Delaware.....	370	489	859		14	2	16			
Maryland.....	1,266	1,849	3,115		35	0	35			
District of Columbia.....	1,984	1,264	3,248		76	14	90		0	0
Virginia.....	1,193	1,796	2,989		34	0	34		173	311
West Virginia.....	230	399	629		98	27	125		24	38
North Carolina.....	304	367	671		70	19	89		46	74
South Carolina.....	800	1,043	1,843		409	0	409			
Georgia.....	2,113	2,884	5,007		79	48	127		10	94
Florida.....	274	400	674		55	18	71			
South Central Division:										
Kentucky.....	1,372	1,951	3,323		114	27	141		191	189
Tennessee.....	1,599	2,251	3,850		0	0	0			
Alabama.....	1,537	2,446	3,983		20	0	20		144	210
Mississippi.....	1,416	1,972	3,388		322	189	512		30	20
Louisiana.....	2,399	3,578	5,977		108	0	108		0	0
Texas.....	2,969	4,232	7,201		0	0	0		0	0
Arkansas.....	561	742	1,303		0	0	0		110	84
Oklahoma.....	31	58	89		102	97	199			
Indian Territory.....	18	34	52		0	0	0			
Total.....	117,202	172,072	289,274		4,053	1,368	5,441		2,032	5,259
Total public secondary students.....	117,202	172,072	289,274		4,053	1,368	5,441		2,032	5,259
Male.....	117,202	172,072	289,274		4,053	1,368	5,441		2,032	5,259
Female.....	172,072	172,072	289,274		1,368	1,368	5,441		5,259	5,259
Total.....	117,202	172,072	289,274		4,053	1,368	5,441		2,032	5,259
North Atlantic Division.....	38,786	55,501	94,287		787	20	807		586	2,723
South Atlantic Division.....	7,236	10,501	17,737		859	128	987		253	517
South Central Division.....	8,815	12,327	21,162		776	304	1,080		475	503
North Central Division.....	56,287	85,051	141,338		953	443	1,396		615	1,434
Western Division.....	6,058	8,692	14,750		678	493	1,171		103	82
North Atlantic Division:										
Maine.....	2,673	3,608	6,281		0	0	0		10	10
New Hampshire.....	1,200	1,640	2,840		0	0	0		10	10
Vermont.....	1,063	1,421	2,514		0	0	0		10	10
Massachusetts.....	11,038	14,199	25,237		0	0	0		5	4
Rhode Island.....	771	1,290	2,061		0	0	0		0	0
Connecticut.....	2,511	2,975	5,486		0	0	0		0	0
New York.....	10,567	15,546	26,113		605	0	605		237	2,130
New Jersey.....	2,444	3,347	5,791		100	0	100		0	83
Pennsylvania.....	6,489	11,475	17,964		82	20	102		324	524
South Atlantic Division:										
Delaware.....	370	489	859		14	2	16			
Maryland.....	1,266	1,849	3,115		35	0	35			
District of Columbia.....	1,984	1,264	3,248		76	14	90		0	0
Virginia.....	1,193	1,796	2,989		34	0	34		173	311
West Virginia.....	230	399	629		98	27	125		24	38
North Carolina.....	304	367	671		70	19	89		46	74
South Carolina.....	800	1,043	1,843		409	0	409			
Georgia.....	2,113	2,884	5,007		79	48	127		10	94
Florida.....	274	400	674		55	18	71			
South Central Division:										
Kentucky.....	1,372	1,951	3,323		114	27	141		191	189
Tennessee.....	1,599	2,251	3,850		0	0	0			
Alabama.....	1,537	2,446	3,983		20	0	20		144	210
Mississippi.....	1,416	1,972	3,388		322	189	512		30	20
Louisiana.....	2,399	3,578	5,977		108	0	108		0	0
Texas.....	2,969	4,232	7,201		0	0	0		0	0
Arkansas.....	561	742	1,303		0	0	0		110	84
Oklahoma.....	31	58	89		102	97	199			
Indian Territory.....	18	34	52		0	0	0			

North Central Division:										
Ohio.....	10,906	15,173	26,070	248	112	380	50	75	125	11,204
Indiana.....	6,296	7,615	12,911	45	11	56	0	0	0	15,360
Illinois.....	8,517	15,093	23,610	145	21	166	33	22	55	7,828
Michigan.....	7,628	11,206	10,124	0	0	0	0	0	0	8,605
Wisconsin.....	4,230	5,766	9,996	0	0	0	0	0	0	15,136
Minnesota.....	3,153	4,607	7,820	0	0	0	0	0	0	11,206
Iowa.....	6,292	9,348	15,640	40	6	46	0	0	0	5,766
Missouri.....	3,886	6,031	10,517	0	0	0	28	78	106	4,667
North Dakota.....	162	220	382	81	53	134	494	1,230	1,724	6,380
South Dakota.....	303	435	728	151	113	264	5	23	28	4,380
Nebraska.....	2,848	4,230	7,078	243	127	370	5	6	11	7,961
Kansas.....	2,866	4,587	7,453	0	0	0	0	0	0	7,966
Western Division:										
Montana.....	275	386	671	25	13	88	.....	.....	.....	300
Wyoming.....	79	80	159	27	24	51	.....	.....	.....	106
Colorado.....	1,156	1,686	2,842	93	84	177	15	15	30	1,284
New Mexico.....	71	71	142	92	95	187	.....	.....	.....	1,785
Arizona.....	50	89	139	21	10	81	1	3	4	166
Utah.....	112	185	297	98	39	137	.....	.....	.....	72
Nevada.....	167	283	450	58	60	118	.....	.....	.....	210
Idaho.....	77	103	180	133	83	216	.....	.....	.....	224
Washington.....	638	902	1,540	57	33	90	0	0	0	210
Oregon.....	381	599	980	74	52	126	87	64	151	695
California.....	3,052	4,298	7,350	0	0	0	.....	.....	.....	715
										542
										1,257
										7,453
										4,587
										2,866
										3,091
										4,557
										544
										2,866
										4,380
										7,966
										12,241
										15,752
										7,820
										9,996
										11,206
										15,136
										8,605
										7,828
										23,831
										12,967
										26,564

TABLE 25.—*Distribution of students receiving secondary instruction—Continued.*

State or Territory.	In private institutions.												Total.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
	In private high schools.					In preparatory departments of private universities and colleges.					In preparatory departments of colleges for women.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
	In private high schools.		In preparatory departments of private universities and colleges.			In preparatory departments of private universities and colleges.		In preparatory departments of private universities and colleges.			In preparatory departments of colleges for women.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
	Male.	Fe. female.	Total.	Male.	Fe. female.	Total.	Male.	Fe. female.	Total.	Male.	Fe. female.	Total.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
1	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	1222	1223	1224	1225	1226	1227	1228	1229	1230	1231	1232	1233	1234	1235	1236	1237	1238	1239	1240	1241	1242	1243	1244	1245	1246	1247	1248	1249	1250	1251	1252	1253	1254	1255	1256	1257	1258	1259	1260	1261	1262	1263	1264	1265	1266	1267	1268	1269	1270	1271	1272	1273	1274	1275	1276	1277	1278	1279	1280	1281	1282	1283	1284	1285	1286	1287	1288	1289	1290	1291	1292	1293	1294	1295	1296	1297	1298	1299	1300	1301	1302	1303	1304	1305	1306	1307	1308	1309	1310	1311	1312	1313	1314	1315	1316	1317	1318	1319	1320	1321	1322	1323	1324	1325	1326	1327	1328	1329	1330	1331	1332	1333	1334	1335	1336	1337	1338	1339	1340	1341	1342	1343	1344	1345	1346	1347	1348	1349	1350	1351	1352	1353	1354	1355	1356	1357	1358	1359	1360	1361	1362	1363	1364	1

Louisiana.....	421	1,171	1,595	523	307	950	128	.....	.....	.....	1,016	1,660	2,082	1,426	2,244	3,670
Texas.....	2,078	3,335	6,013	1,004	627	1,721	95	84	230	923	3,856	4,296	8,152	6,855	8,593	15,383
Arkansas.....	1,004	675	1,870	331	253	381	36	40	23	71	1,381	1,180	2,570	2,162	2,015	4,177
Oklahoma.....	0	13	13	0	0	0	0	.....	.....	.....	0	13	15	133	170	303
Indian Territory.....	149	90	248	23	0	23	0	.....	.....	.....	172	99	271	190	131	323
North Central Division:																
Ohio.....	2,590	2,168	4,696	2,680	1,355	4,635	240	1,703	758	2,461	7,142	4,459	11,601	18,346	10,819	38,165
Indiana.....	471	941	1,412	1,013	278	1,291	95	385	384	769	1,869	1,008	3,567	7,210	9,334	16,334
Illinois.....	1,355	1,814	3,169	2,288	1,087	3,375	325	176	64	240	4,082	3,280	7,372	12,777	18,426	31,203
Michigan.....	1,468	643	1,111	1,085	617	1,702	0	244	191	438	1,797	1,678	3,475	9,625	12,974	22,599
Wisconsin.....	1,296	627	1,923	655	174	820	32	0	0	0	1,951	853	2,784	6,181	6,599	12,780
Minnesota.....	891	577	1,468	512	261	770	42	67	19	86	1,470	902	2,372	4,623	5,569	10,192
Iowa.....	1,310	1,192	2,502	1,339	982	2,331	0	343	348	691	2,592	2,532	5,524	9,352	11,964	21,316
Missouri.....	2,610	2,323	4,839	2,140	1,143	3,283	229	124	219	343	292	3,914	9,092	9,558	11,775	21,333
North Dakota.....	81	85	106	124	138	262	0	.....	.....	.....	295	223	428	433	519	972
South Dakota.....	103	189	292	268	318	586	0	.....	.....	.....	371	507	878	830	1,051	1,881
Nebraska.....	416	378	794	764	490	1,263	0	321	309	630	1,501	1,186	2,687	4,592	5,543	10,135
Kansas.....	791	708	1,499	1,176	635	1,811	69	142	126	263	2,109	1,538	3,647	4,975	6,125	11,100
Western Division:																
Montana.....	18	76	94	26	15	41	0	33	28	61	77	119	196	377	528	905
Wyoming.....	0	21	21	0	0	0	0	12	11	23	12	32	44	118	130	254
Colorado.....	199	187	386	66	54	120	0	.....	.....	.....	265	241	506	1,529	2,026	2,555
New Mexico.....	57	74	131	0	0	0	0	.....	.....	.....	57	74	131	220	240	460
Arizona.....	.....	.....	.....	0	0	0	0	.....	.....	.....	.....	.....	.....	72	102	174
Utah.....	938	782	1,740	0	0	0	0	55	108	223	1,013	950	1,963	1,223	1,174	3,397
Nevada.....	0	39	39	0	0	0	0	.....	.....	.....	0	39	39	225	382	607
Idaho.....	0	5	5	0	0	0	0	.....	.....	.....	0	5	5	210	191	401
Washington.....	171	576	747	225	175	410	0	.....	.....	.....	406	751	1,157	1,101	1,686	2,787
Oregon.....	297	282	579	297	350	747	0	.....	.....	.....	694	632	1,326	1,246	1,347	2,583
California.....	980	1,416	2,405	1,091	412	1,503	74	0	1	7	2,186	1,853	4,139	5,238	6,251	11,489

CHAPTER IV.

STATISTICAL REVIEW OF HIGHER EDUCATION.

I.—UNIVERSITIES AND COLLEGES.

Institutions.—The number of universities and colleges for males and for both sexes from which reports were received at the close of the scholastic year is 476. Of this number 76 are located in the North Atlantic Division, 65 in the South Atlantic Division, 85 in the South Central Division, 208 in the North Central Division, and 42 in the Western Division. Comparing the number of institutions in the several divisions with the population, we find that in the North Atlantic Division there is 1 institution for every 228,968 persons; in the South Atlantic Division, 1 for every 136,276; in the South Central Division, 1 for every 129,093; in the North Central Division, 1 for every 107,511; in the Western Division, 1 for every 72,086; while for the entire country there is 1 institution for every 131,559 persons.

The number of institutions belonging to the various religious denominations were reported as follows:

<i>Religious denomination.</i>	
Nonsectarian	113
Roman Catholic	52
Baptist	51
Methodist Episcopal	65
Methodist Episcopal South	19
African Methodist Episcopal	4
Methodist Protestant	2
Protestant Episcopal	5
Presbyterian	40
Cumberland Presbyterian	8
United Presbyterian	6
Congregational	24
Christian	21
Lutheran	24
United Brethren	12
Universalist	4
Evangelical	3
Friends	7
Reformed	9
Seventh Day Adventist	3
Church of God	1
New Church	1
Dunkard	1
Unknown	1
Total	476

Professors and instructors.—The number of professors and instructors in the various departments of the universities and colleges is given by States in the following table:

TABLE 1.—Universities and colleges—Professors and instructors.

State or Territory.	Institutions.	Preparatory departments.		Collegiate departments.		Professional departments.		Total.	
		Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
United States.....	476	1,902	807	5,597	660	2,847	24	9,388	1,509
North Atlantic Division.....	76	298	49	1,762	37	985	2	2,831	82
South Atlantic Division.....	65	203	77	620	49	246	0	959	135
South Central Division.....	85	217	138	574	105	258	1	950	254
North Central Division.....	208	1,017	450	2,197	403	1,042	19	3,736	873
Western Division.....	42	167	93	444	72	316	2	812	165
North Atlantic Division:									
Maine.....	3	0	0	41	0	16	0	56	0
New Hampshire.....	1	0	0	30	0	16	0	48	0
Vermont.....	2	0	0	35	0	20	0	55	0
Massachusetts.....	9	31	1	305	2	276	1	609	5
Rhode Island.....	1	0	0	64	0	0	0	64	0
Connecticut.....	3	0	0	163	0	75	0	245	0
New York.....	23	158	12	576	6	307	6	993	20
New Jersey.....	4	20	4	121	0	3	0	131	4
Pennsylvania.....	30	89	32	427	29	272	1	780	53
South Atlantic Division:									
Delaware.....	1	0	0	13	0	0	0	13	0
Maryland.....	10	58	10	143	12	31	0	197	20
District of Columbia.....	4	30	0	92	3	130	0	235	9
Virginia.....	9	30	4	108	7	18	0	141	11
West Virginia.....	4	3	1	23	1	2	0	31	4
North Carolina.....	13	31	18	94	11	30	0	138	27
South Carolina.....	9	20	7	64	6	10	0	75	14
Georgia.....	10	19	16	63	7	23	0	101	25
Florida.....	5	12	21	20	2	2	0	28	25
South Central Division:									
Kentucky.....	15	28	19	83	13	28	0	145	35
Tennessee.....	23	68	47	186	38	148	1	337	81
Alabama.....	9	13	7	65	4	9	0	84	12
Mississippi.....	5	10	5	32	3	1	0	40	8
Louisiana.....	9	41	18	70	18	40	0	147	35
Texas.....	13	43	25	93	14	30	0	144	52
Arkansas.....	9	12	12	38	14	0	0	45	26
Oklahoma.....	1	2	1	4	0	0	0	5	1
Indian Territory.....	1	0	4	3	1	2	0	3	4
North Central Division:									
Ohio.....	40	188	69	404	63	210	1	747	158
Indiana.....	15	69	17	193	22	39	0	282	46
Illinois.....	31	173	66	423	53	276	18	802	156
Michigan.....	11	67	36	171	29	68	0	241	50
Wisconsin.....	10	41	12	123	11	43	0	184	21
Minnesota.....	11	59	20	168	32	82	0	235	37
Iowa.....	23	78	53	169	42	134	0	314	99
Missouri.....	30	103	81	217	48	81	0	404	124
North Dakota.....	3	20	11	24	9	0	0	26	11
South Dakota.....	6	31	17	34	13	0	0	42	28
Nebraska.....	10	88	37	115	48	81	0	228	68
Kansas.....	18	100	31	156	33	28	0	231	66
Western Division:									
Montana.....	1	3	2	9	2	0	0	11	5
Wyoming.....	1	1	1	11	1	0	0	12	2
Colorado.....	4	15	7	40	7	95	0	134	9
New Mexico.....	1	3	4	3	1	0	0	3	4
Arizona.....	1	6	2	10	2	0	0	10	2
Utah.....	1	13	2	14	0	0	0	16	2
Nevada.....	1	4	3	11	0	0	0	14	3
Idaho.....	1	10	3	9	2	0	0	10	3
Washington.....	7	16	14	32	18	0	0	40	27
Oregon.....	8	38	24	33	12	67	0	119	39
California.....	16	58	31	272	27	154	2	443	69

The average number of instructors per institution is as follows: North Atlantic Division, 39.6; South Atlantic Division, 16.8; South Central Division, 14.2; North Central Division, 22.2; Western Division, 23.3; and for the entire country, 22.9.

The proportion of male and female instructors in the several departments is as follows:

Sex of instructors.

Division.	Preparatory departments.		Collegiate departments.		Professional departments.		Total.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
United States.....	<i>Per cent.</i> 70.2	<i>Per cent.</i> 29.8	<i>Per cent.</i> 89.4	<i>Per cent.</i> 10.6	<i>Per cent.</i> 99.2	<i>Per cent.</i> .8	<i>Per cent.</i> 86.2	<i>Per cent.</i> 13.8
North Atlantic Division...	85.6	14.4	97.9	2.1	99.8	.2	97.3	2.7
South Atlantic Division...	72.5	27.5	92.7	7.3	100.0	.0	87.7	12.3
South Central Division...	61.1	38.9	84.5	15.5	99.6	.4	78.9	21.1
North Central Division...	69.3	30.7	84.5	15.5	98.2	1.8	81.1	18.9
Western Division.....	64.2	35.8	86.0	14.0	99.4	.6	83.1	16.9

This summarized statement shows that the largest proportion of women instructors is found in the preparatory departments of colleges, and that the largest proportion of male instructors is found in the North Atlantic Division, the home of the leading colleges for women.

Students.—The summarized statistics concerning the sex and color of the students in the several departments of the universities and colleges are given by States in the following tables:

TABLE 2.—University and college students.

State or Territory.	Preparatory departments.						Collegiate departments.					
	White.		Colored.		Total.		White.		Colored.		Total.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
United States	28,910	12,864	1,903	1,511	30,813	14,375	47,072	12,560	658	125	47,730	12,685
North Atlantic Division.....	5,169	686	4	0	5,173	686	17,126	1,626	191	2	17,317	1,628
South Atlantic Division.....	2,680	1,006	963	577	3,643	1,583	4,893	657	194	54	5,087	711
South Central Division.....	4,078	1,978	843	876	4,921	2,854	5,930	1,824	227	00	6,157	1,884
North Central Division.....	14,745	7,831	89	58	14,834	7,889	16,557	7,304	44	9	16,601	7,313
Western Division.....	2,238	1,363	4	0	2,242	1,363	2,566	1,140	2	0	2,568	1,140
North Atlantic Division:												
Maine.....	0	0	0	0	0	0	457	145	1	1	458	146
New Hampshire.....	0	0	0	0	0	0	352	0	3	0	355	0
Vermont.....	0	0	0	0	0	0	235	83	1	1	236	84
Massachusetts.....	432	22	0	0	432	22	3,391	212	2	0	3,393	212
Rhode Island.....	0	0	0	0	0	0	486	73	4	0	490	73
Connecticut.....	0	0	0	0	0	0	2,019	47	0	0	2,019	47
New York.....	3,184	118	0	0	3,184	118	4,779	604	6	0	4,785	604
New Jersey.....	217	25	2	0	219	25	1,394	0	0	0	1,394	0
Pennsylvania.....	1,336	521	2	0	1,338	521	4,013	462	174	0	4,187	462
South Atlantic Division:												
Delaware.....	0	0	0	0	0	0	80	0	0	0	80	0
Maryland.....	589	79	113	61	702	140	727	92	16	4	743	96
District of Columbia.....	266	2	72	12	338	14	368	101	24	6	392	107
Virginia.....	335	65	0	0	335	65	1,076	143	0	0	1,076	143
West Virginia.....	88	13	0	0	88	13	273	115	0	0	273	115
North Carolina.....	468	295	289	74	757	369	1,064	76	80	11	1,144	87
South Carolina.....	190	29	225	190	415	219	542	23	32	3	574	26
Georgia.....	515	301	264	210	779	541	688	46	42	30	730	76
Florida.....	229	222	0	0	229	222	75	61	0	0	75	61
South Central Division:												
Kentucky.....	506	299	77	113	643	412	1,187	266	17	4	1,204	270
Tennessee.....	1,329	683	227	184	1,556	867	1,610	356	115	18	1,725	374
Alabama.....	230	153	89	70	319	223	844	198	2	3	846	201
Mississippi.....	166	17	20	10	186	27	453	66	7	2	460	68
Louisiana.....	472	111	228	256	700	367	617	170	52	20	669	190
Texas.....	941	402	153	225	1,094	627	891	477	22	11	913	488
Arkansas.....	282	235	49	18	331	253	314	284	12	2	326	286
Oklahoma.....	69	55	0	0	69	55	1	0	0	0	1	0
Indian Territory.....	23	23	0	0	23	23	13	7	0	0	13	7
North Central Division:												
Ohio.....	2,852	1,417	76	50	2,928	1,467	3,115	1,305	30	3	3,145	1,308
Indiana.....	1,012	276	1	2	1,013	278	1,634	584	2	0	1,636	584
Illinois.....	2,429	1,105	4	3	2,433	1,108	2,608	1,116	1	2	2,609	1,118
Michigan.....	1,085	616	0	1	1,085	617	1,555	783	0	0	1,585	783
Wisconsin.....	654	174	1	0	655	174	1,233	292	1	0	1,234	292
Minnesota.....	512	264	0	0	512	264	1,413	517	0	0	1,413	517
Iowa.....	1,337	991	2	1	1,339	992	1,328	727	2	1	1,330	728
Missouri.....	2,146	1,143	0	0	2,146	1,143	1,764	801	0	0	1,764	801
North Dakota.....	173	182	0	0	173	182	43	20	0	0	43	20
South Dakota.....	567	403	0	0	567	403	124	56	0	0	124	56
Nebraska.....	1,004	625	3	1	1,007	626	755	496	2	0	757	496
Kansas.....	1,174	635	2	0	1,176	635	1,005	577	6	3	1,011	580
Western Division:												
Montana.....	26	15	0	0	26	15	22	3	0	0	22	3
Wyoming.....	27	24	0	0	27	24	21	15	0	0	21	15
Colorado.....	133	132	1	0	134	132	144	85	0	0	144	85
New Mexico.....	62	80	0	0	62	80	2	0	0	0	2	0
Arizona.....	21	10	0	0	21	10	19	8	0	0	19	8
Utah.....	39	7	0	0	39	7	47	35	0	0	47	35
Nevada.....	58	60	0	0	58	60	35	37	0	0	35	37
Idaho.....	133	83	0	0	133	83	12	4	0	0	12	4
Washington.....	234	175	1	0	235	175	205	143	1	0	206	143
Oregon.....	414	365	2	0	416	365	186	142	0	0	186	142
California.....	1,091	412	0	0	1,091	412	1,873	677	1	0	1,874	677

TABLE 2.—University and college students—Continued.

State or Territory.	Graduate departments.									Professional departments.								
	Resident.					Nonresident.				White.		Colored.		Total.				
	White.		Colored.		Total.	White.		Colored.								Total.		
	Male.	Female.	Male.	Female.	Total.	Male.	Female.	Male.	Female.	Total.	Male.	Female.	Male.	Female.	Total.			
United States.....	2,567	459	0	0	2,567	459	886	104	3	0	889	104	19,955	560	723	18	20,678	587
North Atlantic Division.	1,329	167	0	0	1,329	167	379	18	0	0	379	18	6,290	108	36	0	6,326	108
South Atlantic Division.	396	9	0	0	396	9	24	2	3	0	27	2	1,731	15	418	5	2,149	20
South Central Division..	90	2	0	0	90	2	37	8	0	0	37	8	2,179	9	246	12	2,425	21
North Central Division..	645	234	0	0	645	234	430	71	0	0	430	71	8,903	374	23	1	8,926	375
Western Division.....	107	47	0	0	107	47	16	5	0	0	16	5	852	63	0	0	852	63
North Atlantic Division:																		
Maine.....	0	0	0	0	0	0	0	0	0	0	0	0	111	0	0	0	111	0
New Hampshire.....	6	0	0	0	6	0	0	0	0	0	0	0	130	0	2	0	132	0
Vermont.....	0	0	0	0	0	0	0	0	0	0	0	0	163	0	0	0	163	0
Massachusetts.....	385	39	0	0	385	39	15	1	0	0	15	1	1,532	83	2	0	1,534	83
Rhode Island.....	56	7	0	0	56	7	37	1	0	0	37	1	0	0	0	0	0	0
Connecticut.....	124	34	0	0	124	34	0	0	0	0	0	0	387	0	0	0	387	0
New York.....	500	54	0	0	500	54	278	16	0	0	278	16	2,093	25	1	0	2,094	25
New Jersey.....	92	0	0	0	92	0	8	0	0	0	8	0	32	0	0	0	32	0
Pennsylvania.....	166	33	0	0	166	33	41	0	0	0	41	0	1,812	0	31	0	1,873	0
South Atlantic Division:																		
Delaware.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maryland.....	344	0	0	0	344	0	0	0	0	0	0	0	124	0	6	0	130	0
District of Columbia.	22	7	0	0	22	7	0	0	0	0	0	0	950	15	209	5	1,159	20
Virginia.....	5	0	0	0	5	0	3	0	0	0	3	0	373	0	0	0	373	0
West Virginia.....	0	0	0	0	0	0	0	0	0	0	0	0	47	0	0	0	47	0
North Carolina.....	13	2	0	0	13	2	18	2	3	0	21	2	135	0	136	0	271	0
South Carolina.....	3	0	0	0	3	0	3	0	0	0	3	0	12	0	43	0	55	0
Georgia.....	9	0	0	0	9	0	0	0	0	0	0	0	78	0	24	0	102	0
Florida.....	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	12	0
South Central Division:																		
Kentucky.....	2	0	0	0	2	0	4	0	0	0	4	0	366	0	0	0	366	0
Tennessee.....	36	0	0	0	36	0	13	0	0	0	13	0	1,010	4	173	6	1,183	10
Alabama.....	15	0	0	0	15	0	0	0	0	0	0	0	25	0	3	0	24	0
Mississippi.....	3	0	0	0	3	0	15	6	0	0	15	6	20	0	0	0	20	0
Louisiana.....	21	2	0	0	21	2	0	0	0	0	0	0	453	0	46	6	499	6
Texas.....	13	0	0	0	13	0	4	1	0	0	4	1	297	5	6	0	303	5
Arkansas.....	0	0	0	0	0	0	1	1	0	0	1	1	0	0	18	0	18	0
Oklahoma.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Indian Territory.....	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	8	0
North Central Division:																		
Ohio.....	75	35	0	0	75	35	236	14	0	0	236	14	1,368	9	8	0	1,376	9
Indiana.....	67	18	0	0	67	18	8	5	0	0	8	5	354	17	0	0	354	17
Illinois.....	222	89	0	0	222	89	78	13	0	0	78	13	3,110	144	8	1	3,118	145
Michigan.....	63	18	0	0	63	18	36	16	0	0	36	16	1,265	99	0	0	1,265	99
Wisconsin.....	54	12	0	0	54	12	31	13	0	0	31	13	351	3	0	0	351	3
Minnesota.....	77	18	0	0	77	18	0	0	0	0	0	0	623	25	6	0	629	25
Iowa.....	29	20	0	0	29	20	13	8	0	0	13	8	905	49	0	0	905	49
Missouri.....	8	7	0	0	8	7	15	1	0	0	15	1	474	0	0	0	474	0
North Dakota.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Dakota.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nebraska.....	27	10	0	0	27	10	4	0	0	0	4	0	289	20	0	0	289	20
Kansas.....	23	7	0	0	23	7	9	1	0	0	9	1	104	8	1	0	165	8
Western Division:																		
Montana.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wyoming.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Colorado.....	5	1	0	0	5	1	8	0	0	0	8	0	185	21	0	0	185	21
New Mexico.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Arizona.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Utah.....	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Nevada.....	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Idaho.....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Washington.....	2	4	0	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0
Oregon.....	1	0	0	0	1	0	0	0	0	0	0	0	137	12	0	0	137	12
California.....	96	42	0	0	96	42	8	5	0	0	8	5	530	30	0	0	530	30

TABLE 2.—*University and college students—Continued.*

State or Territory.	Total number in all departments.					
	White.		Colored.		Total.	
	Male.	Female.	Male.	Female.	Male.	Female.
United States.....	(1,939) 102,219	32,459	(437) 3,890	2,668	(2,396) 106,109	35,127
North Atlantic Division.....	(149) 30,441	2,828	231	2	(149) 30,672	2,830
South Atlantic Division.....	9,622	1,734	1,885	1,087	11,507	2,821
South Central Division.....	(464) 12,527	4,244	(437) 1,608	1,497	(901) 14,135	5,741
North Central Division.....	(1,346) 43,577	20,180	160	81	(1,346) 43,737	20,261
Western Division.....	6,052	3,473	6	1	6,058	3,474
North Atlantic Division:						
Maine.....	568	145	1	1	569	146
New Hampshire.....	489	0	5	0	494	0
Vermont.....	452	83	1	1	453	84
Massachusetts.....	5,889	331	4	0	5,893	351
Rhode Island.....	579	81	4	0	583	81
Connecticut.....	2,496	100	0	0	2,496	100
New York.....	10,755	853	7	0	10,762	853
New Jersey.....	1,711	25	2	0	1,713	25
Pennsylvania.....	(149) 7,502	1,100	207	0	(149) 7,709	1,190
South Atlantic Division:						
Delaware.....	80	0	0	0	80	0
Maryland.....	1,701	169	129	65	1,830	234
District of Columbia.....	1,607	131	403	189	2,010	320
Virginia.....	1,763	208	0	0	1,763	208
West Virginia.....	445	156	0	0	445	156
North Carolina.....	1,674	375	591	220	2,265	595
South Carolina.....	744	52	432	343	1,176	385
Georgia.....	1,292	360	330	270	1,622	630
Florida.....	316	283	0	0	316	283
South Central Division:						
Kentucky.....	(464) 2,178	701	94	117	(464) 2,272	818
Tennessee.....	3,940	1,088	651	548	4,501	1,036
Alabama.....	1,114	374	91	73	1,205	447
Mississippi.....	661	92	120	147	781	239
Louisiana.....	1,563	283	(437) 329	292	(437) 1,892	575
Texas.....	2,343	1,073	181	242	2,524	1,315
Arkansas.....	598	530	142	78	740	608
Oklahoma.....	91	72	0	0	91	72
Indian Territory.....	39	31	0	0	39	31
North Central Division:						
Ohio.....	7,997	3,905	119	65	8,116	3,970
Indiana.....	2,943	1,072	3	2	2,946	1,074
Illinois.....	(784) 9,315	3,135	12	6	(784) 9,327	3,141
Michigan.....	4,028	1,950	0	1	4,028	1,951
Wisconsin.....	2,421	600	2	0	2,423	600
Minnesota.....	2,490	1,029	6	0	2,496	1,029
Iowa.....	4,010	2,648	4	3	4,014	2,651
Missouri.....	(42) 4,926	2,251	0	0	(42) 4,926	2,251
North Dakota.....	224	205	0	0	224	205
South Dakota.....	520	512	0	0	520	512
Nebraska.....	(174) 2,077	1,198	5	1	(174) 2,082	1,199
Kansas.....	(346) 2,626	1,675	9	3	(346) 2,635	1,678
Western Division:						
Montana.....	50	47	0	0	50	47
Wyoming.....	49	59	0	0	49	59
Colorado.....	473	239	1	0	474	239
New Mexico.....	61	80	0	0	64	80
Arizona.....	40	18	0	0	40	18
Utah.....	184	201	0	0	184	201
Nevada.....	95	97	0	0	95	97
Idaho.....	145	87	0	0	145	87
Washington.....	501	562	2	1	503	563
Oregon.....	765	719	2	0	767	719
California.....	3,686	1,364	1	0	3,687	1,364

The total number of students in all departments of the 476 institutions was 143,632, divided as follows: Preparatory departments, 31.5 per cent; collegiate departments, 42.1 per cent; graduate departments, 2.8 per cent; professional departments, 14.8 per cent, and other departments, 8.8 per cent. The classification of students by sex and color in the several departments was reported as follows:

1. *Students in preparatory departments.*

Division.	Male.	Female.	White.	Colored.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
United States.....	68.2	31.8	92.4	7.6
North Atlantic Division.....	88.3	11.7	99.9	.1
South Atlantic Division.....	69.7	30.3	70.5	29.5
South Central Division.....	63.3	36.7	77.9	22.1
North Central Division.....	65.3	34.7	99.3	.7
Western Division.....	62.2	37.8	99.9	.1

2. *Students in collegiate departments.*

Division.	Male.	Female.	White.	Colored.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
United States.....	79.0	21.0	98.7	1.3
North Atlantic Division.....	91.4	8.6	99.0	1.0
South Atlantic Division.....	87.7	12.3	95.7	4.3
South Central Division.....	76.6	23.4	96.4	3.6
North Central Division.....	69.4	30.6	99.8	.2
Western Division.....	69.1	30.9	99.9	.1

3. *Students in graduate departments.*

Division.	Male.	Female.	White.	Colored.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
United States.....	84.8	15.2	100.0	0
North Atlantic Division.....	88.8	11.2	100.0	0
South Atlantic Division.....	97.8	2.2	100.0	0
South Central Division.....	97.8	2.2	100.0	0
North Central Division.....	73.4	26.6	100.0	0
Western Division.....	69.5	30.5	100.0	0

4. *Students in professional departments.*

Division.	Male.	Female.	White.	Colored.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
United States.....	97.2	2.8	96.5	3.5
North Atlantic Division.....	98.3	1.7	99.4	.6
South Atlantic Division.....	99.1	.9	80.5	19.5
South Central Division.....	99.1	.9	79.5	10.5
North Central Division.....	96.0	4.0	99.7	.3
Western Division.....	93.1	6.9	100.0	0

5. *Students in all departments.*

Division.	Male.	Female.	Unclassified.	White.	Colored.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
United States	73.9	24.5	1.6	95.1	4.9
North Atlantic Division.....	91.1	8.4	.5	99.3	.7
South Atlantic Division.....	80.3	19.7	.0	79.3	20.7
South Central Division.....	68.0	27.6	4.4	83.0	17.0
North Central Division.....	66.9	31.0	2.1	99.6	.4
Western Division.....	63.6	36.4	.0	99.9	.1

An examination of the preceding summarized statements shows that the colored students form a very small percentage of the total number. This is especially true with respect to the collegiate and graduate departments. The colored students are most numerous in the preparatory and professional departments of institutions in the South Atlantic and South Central divisions. As would naturally be expected, the proportion of women students is smallest in the North Atlantic Division. This is due undoubtedly to the number of excellent colleges for women located in said division. In the Southern States nearly all the institutions for colored people are open to both sexes. This fact, together with the recent opening to women of a number of institutions which had previously been open only to males, accounts for the comparatively large proportion of women students in the South Atlantic and South Central divisions. The largest proportion of women students is found in the North Central and Western divisions, where nearly all of the institutions are coeducational.

The number of students to each instructor in the collegiate departments is as follows: United States, 9.7; North Atlantic Division, 10.5; South Atlantic Division, 8.7; South Central Division, 11.8; North Central Division, 9.2; and Western Division, 7.2.

Of the 60,415 students reported as being in the collegiate departments only 45,664, or 75.6 per cent, were reported in courses leading to a first or bachelor's degree. This percentage is known to be too small, as the desired data were not given by a number of institutions. In some cases, especially in institutions where the system of "schools" is used, it is impossible to give in advance the particular degree for which a student may apply. The percentage of students reported in undergraduate degree courses that are pursuing courses leading to the several degrees, together with the number of students in pedagogical and business courses, are as follows:

TABLE 3.—*Students in courses of study in universities and colleges.*

State or Territory.	Students reported in undergraduate degree courses.	Per cent of students in undergraduate degree courses pursuing courses leading to—								Students in pedagogical course.	Students in business course.
		A. B. degree.	Ph. B. degree.	B. L. degree.	B. S. degree.	B. C. E. degree.	B. M. E. degree.	R. E. E. degree.	Other first degrees.		
United States	45,664	50.0	10.0	6.7	20.0	2.2	1.3	1.9	1.9	4,907	7,300
North Atlantic Division ..	10,581	63.8	8.0	1.6	13.9	4.0	2.7	3.5	2.5	227	682
South Atlantic Division ..	3,562	78.3	5.3	1.7	12.2	1.1	.2	.3	.9	738	307
South Central Division ..	4,123	51.8	4.3	9.2	32.6	1.0	.....	.....	.6	935	1,690
North Central Division ..	18,645	45.6	13.7	11.2	24.0	1.4	.6	1.5	2.0	2,643	4,037
Western Division	2,753	57.5	11.2	9.6	19.5	.7	.7	.3	.5	364	575
North Atlantic Division:											
Maine	572	100.0	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Hampshire	371	54.5	.....	17.5	23.7	4.3	.....	.....	.....	.....	.....
Vermont	307	43.6	18.2	.....	23.5	14.7	.....	.....	.....	.....	.....
Massachusetts	3,330	84.6	.6	.....	12.1	.4	.....	2.3	.....	5	23
Rhode Island	417	66.4	27.1	.....	.5	0.0	.....	.....	.....	.....	.....
Connecticut	1,955	66.3	31.0	.1	2.6	.....	.....	.....	.....	.....	.....
New York	4,454	43.0	6.7	2.8	17.8	5.9	6.5	9.4	7.9	88	314
New Jersey	1,302	62.1	.....	.....	23.8	12.4	.....	1.7	.....	.....	49
Pennsylvania	3,873	65.8	6.0	2.1	15.1	3.5	4.3	1.6	1.6	134	296
South Atlantic Division:											
Delaware	70	54.3	.....	.....	2.9	20.0	7.1	14.3	1.4	.....	.....
Maryland	726	95.2	.....	2.5	2.3	.....	.....	.....	.....	82	29
District of Columbia ..	281	74.4	.....	.....	22.4	2.8	.....	.4	.....	5	.....
Virginia	365	99.2	.....	.....	.8	.....	.....	.....	.....	13	42
West Virginia	6	.....	.....	66.7	.....	.....	.....	33.3	.....	78	35
North Carolina	957	66.7	14.6	2.9	15.1	.....	.....	.7	.....	319	76
South Carolina	460	80.2	5.9	.....	13.9	.....	.....	.....	.....	96	5
Georgia	620	70.5	3.5	.2	22.3	2.9	.3	.....	.3	140	89
Florida	77	57.1	1.3	11.7	3.9	.....	.....	26.0	.....	5	31
South Central Division:											
Kentucky	503	55.1	3.4	24.4	17.1	.....	.....	.....	.....	56	601
Tennessee	898	55.0	4.6	3.3	36.3	.8	.....	.....	.....	445	296
Alabama	558	55.5	3.0	.7	35.7	2.7	.4	.....	2.0	76	60
Mississippi	472	39.8	4.2	9.5	43.9	.....	.....	.....	2.6	95	19
Louisiana	770	50.4	.4	.....	49.2	.....	.....	.....	.....	51	98
Texas	648	52.2	6.0	26.9	11.7	3.2	.....	.....	.....	92	588
Arkansas	254	52.0	23.6	1.6	22.8	.....	.....	.....	.....	111	21
Indian Territory	20	35.0	.....	.....	65.0	.....	.....	.....	.....	9	7
North Central Division:											
Ohio	3,798	45.5	20.2	10.1	14.5	2.3	.8	3.4	3.2	741	775
Indiana	1,876	53.6	14.2	6.7	19.8	1.4	1.0	.8	2.5	167	150
Illinois	2,616	49.5	13.4	7.6	29.3	.1	.....	.....	.1	176	732
Michigan	1,808	32.7	21.6	17.4	28.3	.....	.....	.....	.....	120	123
Wisconsin	1,212	27.4	2.1	34.7	19.3	4.9	4.2	7.2	.2	151	125
Minnesota	1,140	34.3	7.4	26.7	21.6	3.0	1.3	4.4	1.3	120	192
Iowa	1,749	36.7	23.9	1.1	35.6	2.6	.....	.....	.1	260	451
Missouri	1,743	55.9	10.1	10.7	21.9	.....	.....	.....	1.4	316	580
North Dakota	63	95.2	1.6	1.0	1.6	.....	.....	.....	.....	12	55
South Dakota	172	48.8	9.4	15.7	26.1	.....	.....	.....	.....	140	117
Nebraska	1,164	60.6	1.1	.3	38.0	.....	.....	.....	.....	186	131
Kansas	1,304	53.0	3.4	7.3	23.8	.....	.....	12.5	.....	254	606
Western Division:											
Wyoming	21	28.6	.....	14.2	28.6	.....	28.6	.....	.....	21	.....
Colorado	131	23.7	38.2	7.6	17.6	.7	3.1	.7	8.4	.....	170
New Mexico .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	30	20
Arizona	27	25.9	.....	.....	63.0	11.1	.....	.....	.....	.....	4
Nevada	70	55.7	.....	.....	44.3	.....	.....	.....	.....	40	56
Idaho	15	20.0	13.3	.....	46.7	20.0	.....	.....	.....	.....	.....
Washington	90	50.0	1.1	7.8	34.4	6.7	.....	.....	.....	93	57
Oregon	227	60.4	2.6	16.7	20.3	.....	.....	.....	.....	53	58
California	2,172	60.5	11.4	9.5	17.3	.3	.5	.4	.1	127	210

Preparation of freshmen.—The inquiry concerning the kind or class of schools in which the college students were prepared has been continued during the year with but moderate success. Replies on this point were received from but 256 of the 476 institutions, and show that the freshmen in these institutions were prepared as follows: In prepar-

atory departments of colleges, 39.9 per cent; in private preparatory schools, 15.5 per cent; in public high schools, 40.9 per cent; and by private study, 3.7 per cent. The results of the inquiry, by States and divisions, are given in the following table:

TABLE 4.—*Preparation of freshmen.*

State or Territory.	Institutions reporting.	Freshmen reported.	Per cent of freshmen reported prepared by—			
			Preparatory departments of colleges.	Private preparatory schools.	Public high schools.	Private study.
United States.....	250	10,125	39.9	15.5	40.9	3.7
North Atlantic Division.....	43	2,922	20.6	28.4	46.5	4.5
South Atlantic Division.....	29	645	55.2	21.1	20.8	2.9
South Central Division.....	39	1,231	49.7	17.6	28.0	4.7
North Central Division.....	120	4,596	48.7	6.4	42.5	2.4
Western Division.....	25	731	31.9	12.6	47.3	8.2
North Atlantic Division:						
Maine.....	3	177	14.1	24.9	59.9	1.1
New Hampshire.....						
Vermont.....	2	93		37.6	61.3	1.1
Massachusetts.....	5	744	6.9	33.7	55.0	4.4
Rhode Island.....						
Connecticut.....						
New York.....	16	1,046	21.6	18.3	53.7	3.4
New Jersey.....	2	103	45.6	20.4	33.0	1.0
Pennsylvania.....	15	759	29.2	37.7	25.3	7.8
South Atlantic Division:						
Delaware.....	1	19		15.8	73.7	10.5
Maryland.....	5	172	90.2	1.2	14.5	4.1
District of Columbia.....	2	55	50.9	20.0	23.7	5.4
Virginia.....	2	63	27.0	60.3	12.7	
West Virginia.....						
North Carolina.....	7	144	63.2	13.9	20.8	2.1
South Carolina.....	5	94	44.7	30.8	23.4	1.1
Georgia.....	4	54	37.0	61.1	1.9	
Florida.....	3	44	45.5		47.7	6.8
South Central Division:						
Kentucky.....	7	194	52.9	23.7	13.4	
Tennessee.....	10	342	44.4	20.2	20.2	15.2
Alabama.....						
Mississippi.....	4	171	39.2	33.3	26.3	1.2
Louisiana.....	2	85	60.0	13.0	23.5	3.5
Texas.....	7	283	55.5	7	43.4	4
Arkansas.....	5	143	35.7	22.4	41.9	
Oklahoma.....	1	1	100.0			
Indian Territory.....	1	12	91.7		8.3	
North Central Division:						
Ohio.....	17	564	51.6	4.8	42.7	.9
Indiana.....	11	383	45.2	4.9	47.5	2.4
Illinois.....	20	791	55.8	9.4	33.5	1.3
Michigan.....	6	187	50.8	1.6	47.1	.5
Wisconsin.....	6	160	93.1		6.3	.6
Minnesota.....	6	327	20.2	8.6	70.0	1.2
Iowa.....	11	338	45.9	10.6	43.5	
Missouri.....	17	598	63.2	8.9	23.2	4.7
North Dakota.....	2	9	55.6		44.4	
South Dakota.....	6	57	91.2		8.8	
Nebraska.....	8	936	35.6	.2	58.9	5.3
Kansas.....	10	246	40.2	22.4	37.0	.4
Western Division:						
Montana.....						
Wyoming.....	1	10	100.0			
Colorado.....	3	65	50.8	7.7	41.5	
New Mexico.....						
Arizona.....	1	11	72.7		27.3	
Utah.....						
Nevada.....	1	27	37.0	7.4	55.6	
Idaho.....	1	9	100.0			
Washington.....	4	46	58.7	4.4	13.0	23.9
Oregon.....	6	64	89.1		10.9	
California.....	8	499	15.9	16.0	57.7	9.8

Residence of college students.—One of the items of information frequently called for by correspondents of this office is the proportion of the population of the several States and Territories that attend college. This item can be ascertained only approximately. This is due to the fact that the only way to obtain the number of students from the several States attending college is to examine the catalogues of all the universities and colleges of the country and ascertain the home residences of the students enrolled. The inaccuracy of the statistics thus derived is caused by the failure of a number of institutions to publish either the home residences or the classification of their students. An examination of the catalogues of the universities and colleges in the possession of this office has resulted in obtaining statistics concerning the residence of students from 447 institutions, including the principal colleges for women and technological schools. In this examination only students in collegiate courses of study have been counted, preparatory students and students in law, medicine, theology, pharmacy, music, art, etc., not being included.

The total number of college students in the 447 institutions that reported the residences of the students was 67,179, of which number 66,357 reside in the United States and 840 are residents of other countries.

The following table gives for each State and Territory the population, the number of students in college, the proportion of population in college, proportion of students attending college in their respective States, proportion of the students attending college in the several States who are residents of those States, and the proportion of students attending college in the several States who are residents of the geographical division in which the several States are located:

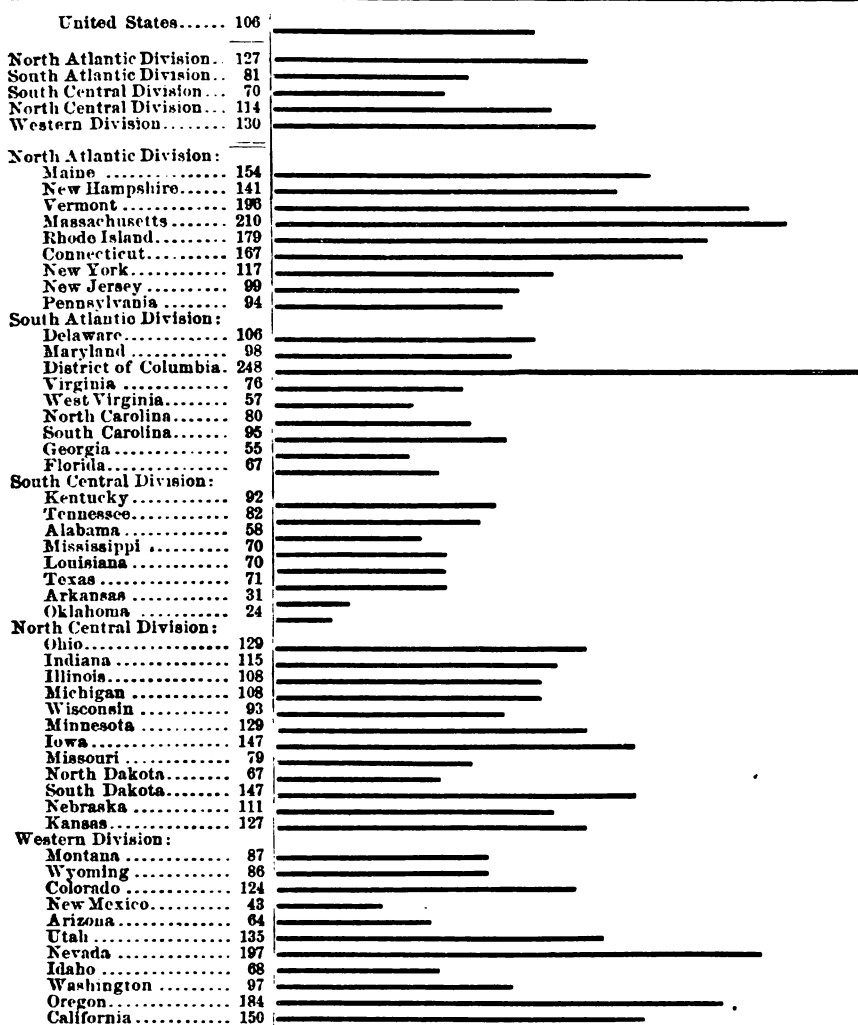
TABLE 5.—*Residence of college students.*

State or Territory.	Population, 1890.	College students from the several States in 47 universities and colleges.	Proportion of population in college.	Proportion of college students attending college in their respective States.	Per cent of students attending colleges of the several States whose residences are in those States.	Per cent of students attending the colleges of the several States whose residences are in the geographical division in which the several States are located.
United States.....	62,622,250	66,357	<i>Per cent.</i> 1.06	<i>Per cent.</i> 98.75	<i>Per cent.</i> 98.75	<i>Per cent.</i> 98.75
North Atlantic Division.....	17,401,545	22,140	.127	94.89	83.32	83.32
South Atlantic Division.....	8,857,920	7,138	.081	82.81	84.75	84.75
South Central Division.....	10,972,893	7,720	.070	88.52	93.91	93.91
North Central Division.....	22,362,279	25,414	.114	88.22	93.42	92.42
Western Division.....	3,027,613	3,939	.130	85.02	89.86	89.86
North Atlantic Division:						
Maine.....	661,086	1,021	.154	63.96	86.72	97.34
New Hampshire.....	376,530	530	.141	41.13	51.42	93.16
Vermont.....	332,422	652	.196	53.83	80.69	96.78
Massachusetts.....	2,238,943	4,709	.210	85.58	53.35	81.35
Rhode Island.....	345,506	618	.179	69.26	57.61	94.35
Connecticut.....	716,258	1,244	.167	59.89	32.49	77.93
New York.....	5,937,853	6,698	.117	65.38	69.93	84.04
New Jersey.....	1,444,933	1,431	.099	44.72	36.57	76.97
Pennsylvania.....	5,258,014	4,943	.094	71.09	74.37	84.34
South Atlantic Division:						
Delaware.....	168,493	179	.106	36.31	81.25	97.50
Maryland.....	1,042,390	1,020	.098	62.16	53.50	66.75
District of Columbia.....	230,392	572	.248	46.15	46.07	58.29
Virginia.....	1,655,980	1,267	.076	83.50	70.49	85.08
West Virginia.....	762,794	437	.057	58.12	64.47	68.27
North Carolina.....	1,617,947	1,287	.080	88.11	85.97	96.89
South Carolina.....	1,151,149	1,092	.095	78.11	94.25	98.67
Georgia.....	1,837,353	1,020	.055	78.73	93.37	97.33
Florida.....	391,422	264	.067	57.95	66.84	97.47
South Central Division:						
Kentucky.....	1,858,635	1,705	.092	79.94	86.21	92.85
Tennessee.....	1,707,518	1,455	.082	85.57	68.14	87.03
Alabama.....	1,513,017	881	.058	85.02	90.13	93.50
Mississippi.....	1,289,000	908	.070	78.85	92.51	99.48
Louisiana.....	1,118,587	780	.070	77.31	95.56	99.37
Texas.....	2,235,523	1,589	.071	82.00	95.33	98.11
Arkansas.....	1,128,179	353	.031	71.10	93.66	97.01
Oklahoma.....	61,834	15	.024	6.67	100.00	100.00
Indian Territory.....		34				
North Central Division:						
Ohio.....	3,672,316	4,721	.129	75.79	84.17	90.43
Indiana.....	2,192,404	2,513	.115	83.21	77.50	92.21
Illinois.....	3,826,351	4,143	.108	64.98	73.23	90.97
Michigan.....	2,093,889	2,251	.108	84.45	63.38	90.68
Wisconsin.....	1,686,880	1,575	.093	73.46	82.52	96.29
Minnesota.....	1,301,826	1,684	.129	83.19	84.50	96.74
Iowa.....	1,911,696	2,811	.147	70.51	87.72	97.41
Missouri.....	2,679,184	2,117	.079	72.74	85.51	93.56
North Dakota.....	182,719	123	.067	62.60	92.77	100.00
South Dakota.....	328,808	485	.147	78.56	92.03	98.79
Nebraska.....	1,058,910	1,178	.111	80.48	91.51	97.59
Kansas.....	1,427,056	1,813	.127	82.68	90.68	96.85
Western Division:						
Montana.....	132,159	115	.087	60.00	97.18	98.59
Wyoming.....	60,705	52	.086	67.31	94.59	97.30
Colorado.....	412,198	511	.124	72.02	82.33	85.91
New Mexico.....	153,593	66	.043	56.66	90.24	96.24
Arizona.....	59,620	38	.064	65.79	96.15	96.15
Utah.....	207,905	280	.135	79.29	89.52	99.19
Nevada.....	45,761	90	.197	71.11	86.49	100.00
Idaho.....	84,385	57	.068	36.84	91.30	100.00
Washington.....	349,390	338	.097	63.02	95.95	97.75
Oregon.....	313,767	578	.184	81.31	94.00	98.60
California.....	1,298,130	1,814	.150	87.32	77.72	85.57

An examination of the preceding table discloses a number of interesting facts. For instance, in the third column—the proportion of the population in college—we find that the District of Columbia has a larger proportion of its population in college than any other State or

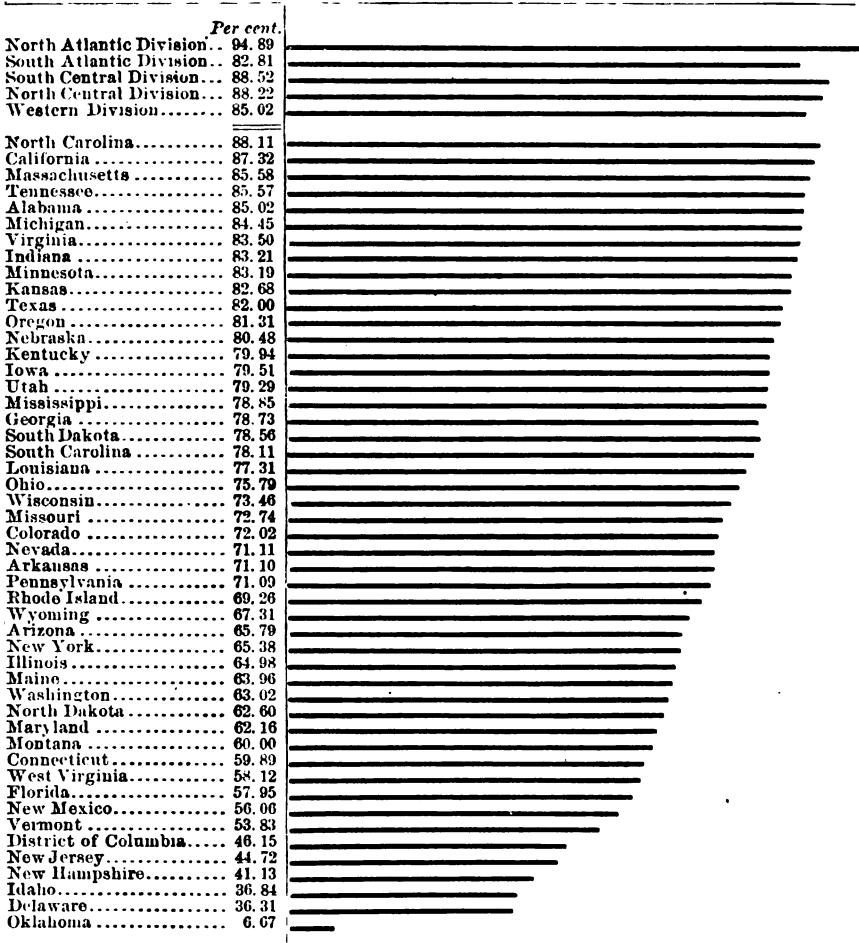
Territory. This is due undoubtedly to the large number of people who are called to the capital city of the country by official duties and who reside there temporarily, and whose children while attending college are frequently credited to the District of Columbia when they should really be credited to other States. Next to the District of Columbia is Massachusetts, with 0.21 per cent of its population in college. Then follow Nevada, Vermont, Oregon, Rhode Island, and Connecticut, in the order named. Among the geographical divisions of the country the Western Division leads, with a percentage of 0.130, followed by the North Atlantic Division, with 0.127. The proportion of population in college may perhaps be more graphically represented by the following diagram:

Number of college students to each 100,000 of population.



The proportion of college students that attend college in their own States is another interesting item, and is represented in the following diagram:

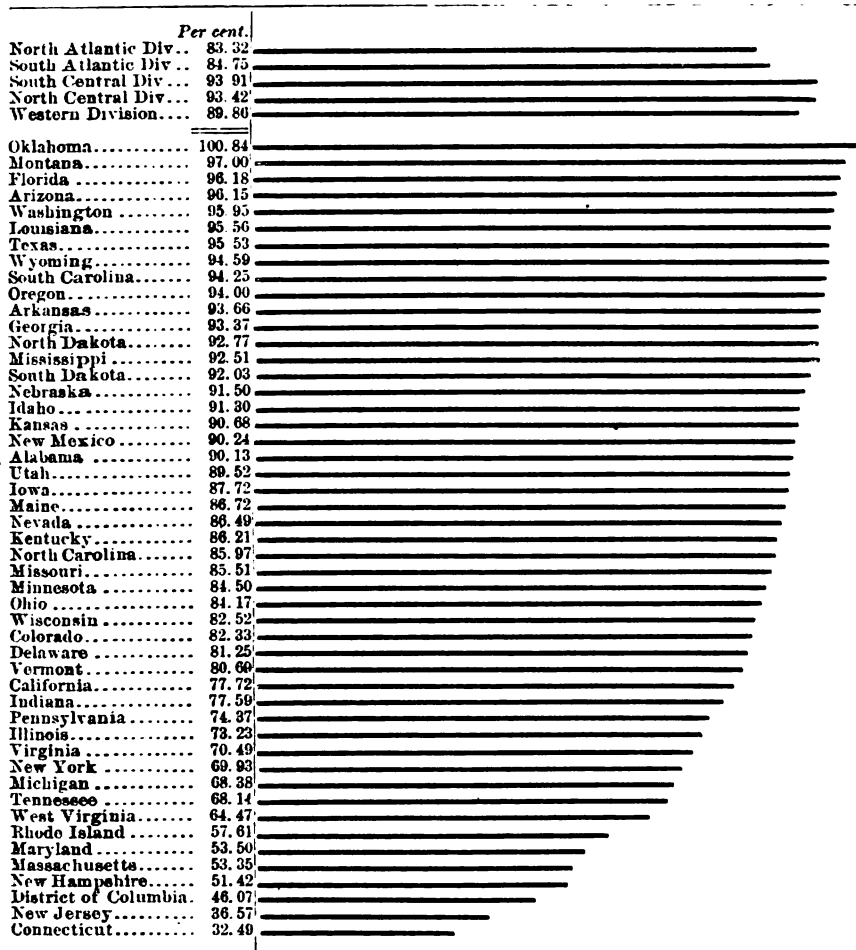
Proportion of college students that attend the colleges of their own States.



From the diagram we find that the North Carolina colleges hold a larger proportion of the students of their own State than the colleges of any other State in the Union. Next come California, Massachusetts, Tennessee, Alabama, Michigan, and Virginia. Among the divisions we find that the North Atlantic Division leads with a percentage of 94.89, showing that but 5.11 per cent of the students of that division attended college in other sections of the country.

The following diagram shows the proportion of students in the colleges of any one State whose residences are in that State:

Proportion of students attending college in the several States whose residences are in those States.



Here we find that Oklahoma heads the list of States and Territories with 100 per cent, showing that all of the college students attending college in Oklahoma were residents of Oklahoma. We also find that in Connecticut the local students form but 32.49 per cent of the total number, showing that the Connecticut colleges draw 67.51 per cent of their students from other States. We see, therefore, that while Connecticut and New Jersey hold but a comparatively small proportion of their own college students, they draw very heavily from other portions of the country.

The number of students from the several States and Territories attending college in any one State or Territory is given in the following tables:

TABLE 6.—*Residence of college students.*

State or Territory.	Institutions.	Residence of students.									
		Maine.	New Hampshire.	Vermont.	Massachusetts.	Rhode Island.	Connecticut.	New York.	New Jersey.	Pennsylvania.	North Atlantic Division.
United States.....	447	1,021	530	652	4,709	618	1,244	6,998	1,431	4,943	22,146
North Atlantic Division..	86	981	512	630	4,581	594	1,185	6,624	1,372	4,535	21,014
South Atlantic Division..	63	13	3	2	47	20	25	108	26	158	492
South Central Division..	73				4			6		9	25
North Central Division..	184	21	12	16	68	4	30	224	26	224	625
Western Division.....	41	6	3	4	9		2	36	3	17	80
North Atlantic Division:											
Maine.....	4	653	24	3	41	2	2	5	1	2	733
New Hampshire.....	2	24	218	60	76	3	1	12		1	395
Vermont.....	3	1	6	351	20	1	1	38	1	2	421
Massachusetts.....	15	219	211	136	4,030	113	262	822	129	225	6,147
Rhode Island.....	2	10	20	19	133	428	26	42	15	8	701
Connecticut.....	4	40	19	32	124	14	745	565	85	163	1,787
New York.....	24	26	9	24	109	20	111	4,575	303	321	5,498
New Jersey.....	5	1	1	4	15	2	14	371	640	299	1,347
Pennsylvania.....	27	7	4	1	33	11	23	194	198	3,514	3,985
South Atlantic Division:											
Delaware.....	1		1	1			20		1	1	2
Maryland.....	9	7		1	31	17		52	22	80	231
District of Columbia..	4	6	2	1	12	1	5	41	1	39	108
Virginia.....	9				2	1		10	1	6	20
West Virginia.....	3							3		29	32
North Carolina.....	14				1	1		2		2	6
South Carolina.....	9										
Georgia.....	9									1	1
Florida.....	5				1				1		2
South Central Division:											
Kentucky.....	11				2			1	3	3	9
Tennessee.....	19				2		1	4	1	6	14
Alabama.....	7										
Mississippi.....	6										
Louisiana.....	10										
Texas.....	12						1	1			2
Arkansas.....	7										
Oklahoma.....	1										
North Central Division:											
Ohio.....	35	3	5	6	17	1	12	54	4	111	213
Indiana.....	15	2		1	4		2	33	1	20	63
Illinois.....	27	10		2	18	1	10	56	16	42	155
Michigan.....	12	2	5	2	13		2	51	4	28	107
Wisconsin.....	5		2	1	5	1	2	12		2	25
Minnesota.....	10	2		1	7		1	3		2	16
Iowa.....	22	1		1	1	1		5		3	11
Missouri.....	22	1		2	1			4	1	9	18
North Dakota.....	4										
South Dakota.....	8				1			1			2
Nebraska.....	8				1			3		5	9
Kansas.....	16			1			1	2		2	6
Western Division:											
Montana.....	2										
Wyoming.....	1										
Colorado.....	5				3		1	3		3	10
New Mexico.....	2							1		1	2
Arizona.....	1								1		1
Utah.....	2										
Nevada.....	1										
Idaho.....	1										
Washington.....	7				1					2	3
Oregon.....	8									1	1
California.....	11	6	3	4	5		1	32	2	10	63

TABLE 6.—*Residence of college students—Continued.*

State or Territory.	Institutions.	Residence of students.									
		Delaware.	Maryland.	District of Columbia.	Virginia.	West Virginia.	North Carolina.	South Carolina.	Georgia.	Florida.	South Atlantic Division.
United States.....	447	179	1,020	52	1,267	437	1,287	1,092	1,020	264	7,138
North Atlantic Division...	86	88	263	204	72	40	29	47	46	24	822
South Atlantic Division...	63	86	719	337	1,157	324	1,220	1,002	873	193	5,911
South Central Division...	73	1	6	4	17	9	26	38	94	37	232
North Central Division...	184	3	31	22	20	51	10	4	7	9	157
Western Division.....	41	1	1	5	1	4	2	1		1	16
North Atlantic Division:											
Maine.....	4			2		2					4
New Hampshire.....	2			2							2
Vermont.....	3			1					1		2
Massachusetts.....	15	19	17	61	10	5	4	13	13	6	148
Rhode Island.....	2		1		1				3		5
Connecticut.....	4	11	16	20	2	2	2	3	4	2	62
New York.....	24	7	28	43	17	10	13	16	9	6	140
New Jersey.....	5	11	41	27	9	8	2	7	8	4	117
Pennsylvania.....	27	40	160	48	33	22	8	8	8	6	333
South Atlantic Division:											
Delaware.....	1	65	13								78
Maryland.....	9	18	634	54	37	11	19	9	7	2	791
District of Columbia...	4	8	28	264	24	7	2		6		334
Virginia.....	9		41	17	1,058	50	35	30	29	17	1,277
West Virginia.....	3		2		10	254	1		2		269
North Carolina.....	14		1	2	24	1	1,134	98	14	4	1,278
South Carolina.....	0				3		24	853	11	2	893
Georgia.....	9				1	1	5	12	803	15	837
Florida.....	5								1	153	154
South Central Division:											
Kentucky.....	11		3		4	4	2	1	8	6	28
Tennessee.....	19	1	8	4	9	5	24	33	48	17	144
Alabama.....	7							3	36	13	52
Mississippi.....	6								1		1
Louisiana.....	10				1				1		2
Texas.....	12							1		1	3
Arkansas.....	7				2						2
Oklahoma.....	1										
North Central Division:											
Ohio.....	35		14	3	7	40		1	2	3	70
Indiana.....	15		6	9	3	3	1		1		23
Illinois.....	27	1	4	4	2	3	6	3	2	1	26
Michigan.....	12	1	4	5	5	4	1			2	22
Wisconsin.....	5	1			1	1			1	1	5
Minnesota.....	10						2		1	1	4
Iowa.....	22				1					1	2
Missouri.....	23		3		1						4
North Dakota.....	4										
South Dakota.....	8										
Nebraska.....	8										
Kansas.....	16			1							1
Western Division:											
Montana.....	2										
Wyoming.....	1										
Colorado.....	5					1					1
New Mexico.....	2										
Arizona.....	1										
Utah.....	2						1				1
Nevada.....	1										
Idaho.....	1										
Washington.....	7					1					1
Oregon.....	8										
California.....	11	1	1	5	1	2	1	1		1	13

TABLE 6.—*Residence of college students—Continued.*

State or Territory.	Residence of students.									
	Institutions.	Kentucky.	Tennessee.	Alabama.	Mississippi.	Louisiana.	Texas.	Arkansas.	Oklahoma.	Indian Territory.
United States.....	447	1,705	1,455	881	908	780	1,589	353	15	34
North Atlantic Division.....	86	105	57	18	14	29	49	10	1	3
South Atlantic Division.....	63	60	74	33	36	30	47	20	1	8
South Central Division.....	73	1,429	1,280	817	847	707	1,436	301	3	14
North Central Division.....	184	108	42	13	10	14	54	21	10	9
Western Division.....	41	3	2		1		3	1		
North Atlantic Division:										
Maine.....	4	1				1				2
New Hampshire.....	2				1					1
Vermont.....	3									
Massachusetts.....	15	31	15	6	4	7	19	3		85
Rhode Island.....	2	1	2	1			1			5
Connecticut.....	4	15	11	1		4	10	1		42
New York.....	24	26	13	4	2	9	12	2		68
New Jersey.....	5	14	8	5	3	8	1		1	40
Pennsylvania.....	27	17	8	1	4		6	4	1	43
South Atlantic Division:										
Delaware.....	1									
Maryland.....	9	14	6	5	3	6	3	1	1	39
District of Columbia.....	4	6	5	5	4	7	5	2		34
Virginia.....	9	31	50	9	21	14	30	13	1	172
West Virginia.....	3	6		1						7
North Carolina.....	14	1	9	6	2	2	2	3		28
South Carolina.....	9		2	4	1		3			10
Georgia.....	9	2	1	3	5	1	4	1		18
Florida.....	5		1							1
South Central Division:										
Kentucky.....	11	1,363	29	4	23	6	34	8		1,468
Tennessee.....	19	59	1,245	57	71	45	78	30		1,590
Alabama.....	7	2	3	749	17	3	2	1		777
Mississippi.....	6	1	3	6	716	32	7	5		770
Louisiana.....	10	2		1	13	603	8			627
Texas.....	12	2			5	16	1,303	6	2	1,341
Arkansas.....	7				2	2	4	251		260
Oklahoma.....	1								1	1
North Central Division:										
Ohio.....	35	29	8	2	3	2	9	1	1	55
Indiana.....	15	46	6	4		1	7	3		69
Illinois.....	27	11	7	2	1		7	4	1	33
Michigan.....	12	3	6	1	2	5	2	3	1	23
Wisconsin.....	5			1	1		1			3
Minnesota.....	10	1					1			2
Iowa.....	22	1	2	1	1	1	7			13
Missouri.....	22	12	13	1		3	15	10	2	60
North Dakota.....	4									
South Dakota.....	8			1						1
Nebraska.....	8									
Kansas.....	16	5			2		5		5	22
Western Division:										
Montana.....	2		1							1
Wyoming.....	1									
Colorado.....	5	1					1			2
New Mexico.....	2									
Arizona.....	1									
Utah.....	2									
Nevada.....	1									
Idaho.....	1									
Washington.....	7						1			1
Oregon.....	8									
California.....	11	2	1		1		1	1		6

TABLE 6.—*Residence of college students—Continued.*

State or Territory.	Institutions.	Residence of students.											
		Ohio.	Indiana.	Illinois.	Michigan.	Wisconsin.	Minnesota.	Iowa.	Missouri.	North Dakota.	South Dakota.	Nebraska.	Kansas.
United States.....	447	4,721	2,513	4,143	2,251	1,575	1,684	2,811	2,117	123	485	1,178	1,813
North Atlantic Division.....	86	658	123	654	161	139	114	142	214	5	11	64	76
South Atlantic Division.....	63	90	22	36	15	11	18	18	47	2	8	12	281
South Central Division.....	73	27	17	31	9	9	1	4	40			3	148
North Central Division.....	184	3,917	2,319	3,384	2,061	1,407	1,547	2,613	1,790	116	469	1,091	1,705
Western Division.....	41	29	32	38	5	9	4	34	26		3	12	205
North Atlantic Division:													
Maine.....	4	1			1	1							3
New Hampshire.....	2	3		12	2	1						3	23
Vermont.....	3	3		2	1								10
Massachusetts.....	15	248	35	204	39	50	53	63	105	1	4	20	913
Rhode Island.....	2	4	1	5	2	7	2		1				24
Connecticut.....	4	89	9	97	32	13	18	13	43			7	328
New York.....	24	138	41	186	65	56	22	27	33		5	21	611
New Jersey.....	5	34	11	39	9	3	5	19	19	2	1	8	182
Pennsylvania.....	27	118	26	49	10	8	12	20	11	1	1	4	267
South Atlantic Division:													
Delaware.....	1												
Maryland.....	9	23	10	17	7	3	3	6	3		2	4	82
District of Columbia.....	4	15	3	12	5	8	13	12	7	2		2	83
Virginia.....	9	5	3	5					13			1	27
West Virginia.....	3	47	5	2	3				22				83
North Carolina.....	14						1					1	2
South Carolina.....	9						1						1
Georgia.....	9								2				2
Florida.....	5		1										1
South Central Division:													
Kentucky.....	11	17	9	12	1	4	1	2	15				64
Tennessee.....	19	10	6	16	7	5		2	17			3	66
Alabama.....	7			1									1
Mississippi.....	6		1										1
Louisiana.....	10				1								1
Texas.....	12		1	1					5				9
Arkansas.....	7			1					3				6
Oklahoma.....	1												
North Central Division:													
Ohio.....	35	3,578	58	62	40	21	10	19	24		3	13	16
Indiana.....	15	99	2,091	142	41	6	3	27	41	1	5	3	26
Illinois.....	27	78	72	2,092	58	67	46	146	77	3	12	39	54
Michigan.....	12	108	75	247	1,901	48	16	58	23		11	13	21
Wisconsin.....	5	14	2	92	61	157	20	35	4	1	7	4	8
Minnesota.....	10	8	2	21	4	68	1,401	37	3	30	23	4	3
Iowa.....	22	11	3	51	6	29	44	2,235	30	3	18	26	26
Missouri.....	22	11	3	49	1	3	1	26	1,540			11	40
North Dakota.....	4				1	2		2		77			83
South Dakota.....	8	1	1	6	1	3	1	3	2	1	381		409
Nebraska.....	8	3	2	12		2		16	9		7	948	12
Kansas.....	16	6	10	10	2	2	3	9	37		2	21	1,499
Western Division:													
Montana.....	2												
Wyoming.....	1												1
Colorado.....	5	9	1	6	2	1		8	11			6	3
New Mexico.....	2			2									2
Arizona.....	1												
Utah.....	2							1					1
Nevada.....	1												
Idaho.....	1												
Washington.....	7												
Oregon.....	8		1				1	1				1	1
California.....	11	20	30	30	3	8	3	24	15		3	5	8

ferred on men, and 1,476, or 16.7 per cent, were conferred on women. The number of different kinds of degrees conferred was 22. Of this number the A. B. degree leads, with a total of 4,402, or almost 50 per cent of the total number conferred. The following tables show: First, the total number of degrees conferred; second, the number conferred on men; and third, the number conferred on women by the institutions of the several States and Territories:

TABLE 7.—Total number of degrees conferred.

State or Territory.	A. B.	A. M.	B. S.	M. S.	Sc. D.	Ph. B.	Ph. M.	Ph. D.	B. L.	M. L.	M. E. L.	B. C. E., C. E., and M. C. E.	B. M. E., M. F., and M. M. E.	B. E. E. and E. E.	E. M.	B. Agr.	B. Mus.	B. Ped.	B. Paint.
United States.....	4,402	978	1,372	96	7	828	29	232	466	18	14	171	56	40	21	12	46	36	10
North Atlantic Division.....	2,090	530	368	28	5	316	7	118	66	2	1	100	36	38	9	8	11	1	6
South Atlantic Division.....	508	113	62	5	1	34	38	10	34	10	1	21	4	4	1	1	1	1	1
South Central Division.....	273	60	206	3	1	25	7	32	3	13	15	4	4	2	8	3	1	5	4
North Central Division.....	1,399	250	675	54	1	420	22	65	316	13	33	12	2	2	8	3	19	16	4
Western Division.....	132	25	61	6	1	33	4	42	4	42	2	33	12	4	4	14	14	14	14
North Atlantic Division:																			
Maine.....	129	13																	
New Hampshire.....	46		20						20			3							
Vermont.....	29		10			14													
Massachusetts.....	591	147	62		2	20		26				4		8		1			
Rhode Island.....	61	18		1		19		2				1							
Connecticut.....	280	28	11	1		105		21	1			4							
New York.....	324	97	98	13	3	113	7	44	20	2		54	24	18	5	7	7		6
New Jersey.....	144	106	24	4				2		b		11		5					
Pennsylvania.....	477	121	c 137	10		45		23	25			26	8	7	4			1	
South Atlantic Division:																			
Delaware.....	6											4							
Maryland.....	105	22	3					33	1										
District of Columbia.....	28	17	6	3				5				3							
Virginia.....	67	39	8									3	4						
West Virginia.....	26		7			8		2				5				1	1		
North Carolina.....	103	9	28			11		4											
South Carolina.....	57	10	5			14													
Georgia.....	115	7	4	2		1		1				6							
Florida.....	1	9	1					2			1								
South Central Division:																			
Kentucky.....	59	10	25			3		10											
Tennessee.....	93	16	65	3		4		3	4			9					1	5	
Alabama.....	43	11	34			14		1			1	6							
Mississippi.....	12	1	9			1		1	4		1								
Louisiana.....	26	8	35										4						
Texas.....	24	14	23		1			2	10	3									
Arkansas.....	15	4	4			3			4		11								
Indian Territory.....	1		1																
North Central Division:																			
Ohio.....	344	63	85	8		107	5	19	69	1		11	9		4		4	6	
Indiana.....	185	29	52	5		56		3	17	1		6							
Illinois.....	191	56	186	12		48	3	22	56	4		3							3
Michigan.....	123	20	83	6	1	70	9	5	47	3		2			1		4	5	
Wisconsin.....	58	16	50	3		4	1	1	69	2		5	2		1				
Minnesota.....	55	4	42	2		19		2	23	2		5			2				
Iowa.....	132	12	73	11		83	3	7	13			3			1		6	1	1
Missouri.....	136	17	51	2		20		1	13			2	1		1	2	3	3	
North Dakota.....	10		4			3			2										
South Dakota.....	53	12	28			2		1							1				
Nebraska.....	106	21	21	5		8	1	4	7								2	1	
Kansas.....																			
Western Division:																			
Montana.....	3														4				
Wyoming.....			1															2	
Colorado.....	13	1	6	1		4		1	1										
New Mexico.....			1	1														6	
Utah.....																			
Nevada.....	3		2																
Washington.....	9	1	9	2														3	
Oregon.....	21	4	6			2			4									3	
California.....	83	19	36	2		27		3	37			2					9		

a Includes 13 B. Arch.

b 1 Litt. D.

c Includes 2 P. C.

TABLE 8.—Degrees conferred on men.

State or Territory.	A. B.	A. M.	B. S.	M. S.	Sc. D.	Ph. B.	Ph. M.	Ph. D.	B. L.	M. L.	M. E. L.	B. C. E., C. E., and M. C. E.	B. M. E., M. F. E., and M. M. E.	B. E. E. and E. E.	E. M.	B. Agr.	B. Mus.	B. Ped.
United States.....	3,941	908	1,077	75	7	579	19	213	206	10	1	171	56	40	21	11	5	18
North Atlantic Division.	1,973	511	337	21	5	272	4	101	41	1		100	38	38	9	7	3	1
South Atlantic Division.	478	108	48	4		29		38	8			21	4			1		
South Central Division.	244	52	154	3	1	23		7	18			15	4					2
North Central Division.	1,146	216	494	43	1	238	15	63	119	9		33	12		2	8	3	13
Western Division.....	100	21	44	4		17		4	20			2			4		1	2
North Atlantic Division:																		
Maine.....	111	12																
New Hampshire.....	46		20						20			3						
Vermont.....	24		15			4												
Massachusetts.....	561	145	60		2	9		26				4		8		1		
Rhode Island.....	59	14				10		2				1						
Connecticut.....	288	27	10			103		14	1			1	4				3	
New York.....	304	91	a 88	7	3	93	4	37	14	1		54	24	18	5	6		
New Jersey.....	144	106	24	4		(b)		2		(b)		11		5				
Pennsylvania.....	430	116	c 120	10		44		20	6			26	8	7	4			1
South Atlantic Division:																		
Delaware.....	6											4						
Maryland.....	92	22	3					33										
District of Columbia.	25	15	3	2				5				3						
Virginia.....	67	39	8									3	4					
West Virginia.....	26		5			3			1			5				1		
North Carolina.....	96	9	20			11			4									
South Carolina.....	57	10	4			14												
Georgia.....	109	7	4	2		1			1			6						
Florida.....		6	1						2									
South Central Division:																		
Kentucky.....	56	10	15			3			7									
Tennessee.....	86	16	51	3		4		3	1			9						2
Alabama.....	38	11	26			12		1				6						
Mississippi.....	12	5	8			1		1	4		1							
Louisiana.....	16	10	26										4					
Texas.....	20		26		1			2	5									
Arkansas.....	15		2			3			1									
Indian Territory.....	1																	
North Central Division:																		
Ohio.....	290	58	64	7		56	5	18	11	1		11	9		4			6
Indiana.....	134	19	45	3		30		2	10	1		6						
Illinois.....	176	51	126	12		32	3	22	15	2		3						
Michigan.....	99	17	67	6	1	43	4	5	25	1		2			1			3
Wisconsin.....	54	16	42	3		1	1	1	33	2		1						
Minnesota.....	49	1	29	2		10		2	7	2		5	2	1	2	1		
Iowa.....	99	7	46	5		50	1	7	8			3						1
Missouri.....	107	15	36	2		12		1	7			2	1		1	2		2
North Dakota.....	5																	
South Dakota.....	9		2			1			2									
Nebraska.....	38	12	19			1		1						1				
Kansas.....	86	20	18	3		2	1	4	1								1	1
Western Division:																		
Montana.....	1														4			
Colorado.....	11		5			4		1										
New Mexico.....																		1
Utah.....			1	1														
Nevada.....	1		2															
Washington.....	8	1	5	1														1
Oregon.....	14	4	1			1			3								1	
California.....	65	16	30	2		12		3	17			2						

a Includes 11 B. Arch.

b 1 Litt. D.

c Includes 2 P. C.

TABLE 9.—Degrees conferred on women by coeducational colleges.¹

State or Territory.	A. B.	B. S.	Ph. B.	B. L.	M. E. L.	A. M.	M. S.	M. L.	Ph. D.	Ph. M.	B. Mus.	B. Paint.	B. O.	B. Ped.	B. Agr.	B. Arch.
United States.....	461	295	249	200	13	70	21	8	19	10	41	10	2	18	1	2
North Atlantic Division...	117	31	44	25		19	7	1	17	3	8	6			1	2
South Atlantic Division...	36	14	5	2		1	5	1			1					
South Central Division...	29	52	2	14	12	8		3			1				3	
North Central Division...	253	181	182	197		34	11	4	2	7	18	4	2		3	
Western Division.....	32	17	16	22		4	2				13			12		
North Atlantic Division:																
Maine.....	18					1										
Vermont.....	5	1	10													
Massachusetts.....	30	2	11			2										
Rhode Island.....	2					4										
Connecticut.....	1	1	2			1	1		7		1					
New York.....	20	10	20	6		6	6	1	7	3	7	6			1	2
Pennsylvania.....	41	17	1	19		5			3							
South Atlantic Division:																
Maryland.....	13			1												
District of Columbia.....	3	3				2	1									
West Virginia.....	2		5	1							1					
North Carolina.....	7	8														
South Carolina.....		1														
Georgia.....	6															
Florida.....	1				1	3										
South Central Division:																
Kentucky.....	3	10		3												
Tennessee.....	7	14		8							1			3		
Alabama.....	5	8	2		1											
Mississippi.....		1			1											
Louisiana.....	10	9				3										
Texas.....	4	7		5		4		3								
Arkansas.....		2		3	11											
Indian Territory.....		1														
North Central Division:																
Ohio.....	54	21	51	58		5	1		1		4					
Indiana.....	51	7	26	7		10	2		1							
Illinois.....	15	60	16	41		5		2				3			2	
Michigan.....	24	16	27	22		3		2			5	4				
Wisconsin.....	4	8	3	30												
Minnesota.....	6	13	9	16		3										
Iowa.....	33	27	33	5		5	0			2	6	1				
Missouri.....	29	15	8	6		2					3			1		
North Dakota.....	1															
South Dakota.....	1	2	2													
Nebraska.....	15	9	1													
Kansas.....	20	3	6	6		1	2				1		2			
Western Division:																
Montana.....	2															
Wyoming.....		1														
Colorado.....	2	1		1		1	1								2	
New Mexico.....															5	
Nevada.....	2															
Washington.....	1	4					1								2	
Oregon.....	7	5	1	1							4				2	
California.....	18	6	15	20		3					9					

¹ For degrees conferred on women by colleges for women see pp. 126, 131.

Honorary degrees.—The total number of honorary degrees conferred by the institutions under consideration was 785. The number of different kinds of degrees conferred by the institutions of the several States and Territories is as follows:

TABLE 10.—*Honorary degrees conferred.*

State or Territory.	D. D.	LL. D.	Ph. D.	S. T. D.	L. H. D.	Sc. D.	Litt. D.	D. C. L.	A. B.	A. M.	Ph. B.	B. S.	M. S.	C. E.	Mus. D.	M. L.	M. D.	B. O.
United States.....	323	147	33	4	3	18	11	3	10	180	2	3	18	14	7	5	1	1
North Atlantic Division.....	86	64	14	3	2	16	8		7	77	1	1	2	2			1	
South Atlantic Division.....	52	21	3		1	1	2		1	34		1	1					
South Central Division.....	49	8	5					2		21				10				
North Central Division.....	127	52	10	1			1	1	2	41	1	1	15	2	5	5		1
Western Division.....	9	2	1			1				7								
North Atlantic Division:																		
Maine.....	8	12				6	5			10								
Vermont.....	2	2								1								
Massachusetts.....	8	7								4								
Rhode Island.....	3	2				4				4								
Connecticut.....	9	8							4	13	1							
New York.....	19	19	7	3	1				2	25			1		1			
New Jersey.....	2	5	4			1			3	3		1		1	1			
Pennsylvania.....	35	9	3		1	5	3		1	17			1	1	1		1	
South Atlantic Division:																		
Maryland.....	8	11							1	18		1						
District of Columbia.....	4	3			1	1				3								
Virginia.....	8	4					1			1								
West Virginia.....	3		2				1			3								
North Carolina.....	15									3			1					
South Carolina.....	9	2	1							1								
Georgia.....	5	1								5								
South Central Division:																		
Kentucky.....	4	1								3								
Tennessee.....	30	2						2		11								
Alabama.....	3	3	1							5				10				
Mississippi.....	3	1																
Louisiana.....	4		1															
Texas.....	1	1	1															
Arkansas.....	4		2							2								
North Central Division:																		
Ohio.....	46	18	2					1		16		1	11		5			
Indiana.....	15	5		1						8								
Illinois.....	23	5	5							4			3	2		5		
Michigan.....	7	5								3								
Wisconsin.....	4	2							1	2								
Minnesota.....	2																	
Iowa.....	8	5								3			1					
Missouri.....	7	0							1	2								
South Dakota.....	2									1								
Nebraska.....	7	6	2				1			1								
Kansas.....	6		1							1	1							1
Western Division:																		
Utah.....						1												
Idaho.....		2																
Washington.....	5		1							1								
Oregon.....	2									5								
California.....	2									1								

a Also 1 B. D.

b Also 1 LL. B.

c Mus. B.

Property.—The property of universities and colleges may properly be classed as follows: Fellowships, scholarships, libraries, apparatus, grounds and buildings, and productive funds.

The number of fellowships reported was 305, of which number 149, or 48.9 per cent, are held by the institutions of the North Atlantic Division. The value or income of fellowships and scholarships was given in full in the Annual Report for 1892-93.

The value of the entire equipment of the institutions is given as \$212,181,552, of which amount \$98,527,052 are reported as permanent endowment funds. The proportion of property held by the institutions of the several divisions is as follows:

Proportion of property held by the colleges and universities of the several divisions.

Division.	Institutions.	Fellowships.	Scholarships.	Volumes in libraries.	Apparatus.	Grounds and buildings.	Productive funds.
	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>
North Atlantic Division	16.0	48.9	48.6	44.8	49.9	38.5	55.6
South Atlantic Division	13.7	10.5	12.9	11.3	8.8	10.7	7.8
South Central Division	17.8	8.2	13.8	6.8	4.7	8.5	7.0
North Central Division	43.7	30.1	23.0	32.8	29.1	33.9	26.0
Western Division	8.8	2.3	1.1	4.3	7.5	8.4	3.6

The above statement shows that the institutions of the North Atlantic Division are very well provided for in the way of property and endowments. This may be seen by comparing the proportion of institutions to the proportion of property held by the institutions.

The summary, by States and Territories, of the property is given in the following table:

TABLE 11.—*Property held by universities and colleges.*

State or Territory.	Fellowships.	Scholarships.	Libraries.		Value of scientific apparatus and libraries.	Value of grounds and buildings.	Amount of productive funds.
			Bound volumes.	Pamphlets.			
United States.....	305	5,714	5,496,957	1,184,917	\$12,590,487	\$101,064,013	\$98,527,052
North Atlantic Division.....	149	2,779	2,463,650	657,949	6,284,131	38,905,076	54,894,531
South Atlantic Division.....	32	739	820,389	103,634	1,068,884	10,834,200	7,647,215
South Central Division.....	25	785	872,641	78,196	593,295	8,599,828	6,890,512
North Central Division.....	92	1,340	1,806,240	309,272	3,669,577	34,237,829	25,628,895
Western Division.....	7	65	234,037	35,866	944,600	8,487,080	3,496,099
North Atlantic Division:							
Maine.....	0	204	98,630	10,000	114,397	900,000	1,321,000
New Hampshire.....	0	194	75,000	20,000	100,000	500,000	1,078,622
Vermont.....	0	165	63,735	200	173,000	365,000	601,000
Massachusetts.....	48	678	558,563	222,750	1,281,748	7,171,000	13,283,115
Rhode Island.....	2	100	80,000	20,000	232,600	1,250,000	1,201,531
Connecticut.....	12	112	280,000	29,000	150,635	6,712,300	5,323,295
New York.....	62	941	722,915	116,634	2,642,639	12,103,635	22,576,060
New Jersey.....	11	94	133,869	5,015	570,000	1,920,000	3,200,000
Pennsylvania.....	14	291	450,938	234,950	1,019,712	7,983,141	6,311,908
South Atlantic Division:							
Delaware.....	0	30	6,267	5,674	36,334	80,000	83,000
Maryland.....	21	167	150,520	43,970	253,200	1,787,000	3,048,506
District of Columbia.....	4	43	95,531		143,000	2,500,000	415,000
Virginia.....	3	97	141,650	23,350	403,200	2,123,000	1,867,982
West Virginia.....	0	0	10,767	350	5,000	307,000	111,200
North Carolina.....	0	346	80,600	16,640	110,200	1,226,200	518,316
South Carolina.....	0	19	63,950	2,100	20,200	865,000	514,000
Georgia.....	4	33	61,204	10,550	114,750	1,666,000	940,217
Florida.....	0	4	9,900	1,000	13,000	280,000	149,000
South Central Division:							
Kentucky.....	0	367	50,888	6,171	46,000	1,024,000	1,222,453
Tennessee.....	22	126	134,858	26,725	259,120	2,910,450	2,140,740
Alabama.....	0	41	36,850	4,050	35,675	778,500	351,200
Mississippi.....	0	15	24,000	9,000	70,000	480,000	704,400
Louisiana.....	0	146	76,100	19,300	69,500	1,668,378	1,659,398
Texas.....	3	65	36,145	8,570	97,350	1,356,500	736,821
Arkansas.....	0	25	12,800	4,050	13,950	297,000	45,500
Oklahoma.....	0	0	200	130	1,200	50,000	0
Indian Territory.....	0	0	800	200	500	35,000	0
North Central Division:							
Ohio.....	8	301	357,693	90,450	737,050	6,678,000	6,652,697
Indiana.....	1	3	181,876	15,693	304,494	3,906,692	2,130,582
Illinois.....	71	470	499,940	41,163	735,950	6,453,400	6,749,590
Michigan.....	1	2	181,576	58,985	603,690	1,118,922	1,591,703
Wisconsin.....	8	155	105,950	11,300	239,500	2,141,000	1,378,743
Minnesota.....	1	21	73,883	3,025	198,520	2,629,237	1,606,750
Iowa.....	2	201	123,697	12,800	177,823	2,317,528	1,547,502
Missouri.....	0	141	147,551	52,071	201,050	4,203,200	2,555,958
North Dakota.....	0	4	7,068	3,000	21,250	205,000	0
South Dakota.....	0	40	9,277	2,410	10,050	439,000	63,400
Nebraska.....	0	8	49,474	8,075	215,300	1,702,550	222,770
Kansas.....	0	0	68,255	10,300	224,900	1,743,300	669,000
Western Division:							
Montana.....	0	0	1,500	300	2,500	50,000	0
Wyoming.....	0	0	2,926	1,800	25,000	125,000	0
Colorado.....	0	12	22,000	3,500	93,500	1,102,680	387,729
New Mexico.....	0	0	200	100	500	40,000	0
Arizona.....	0	0	872	2,087	35,000	66,000	0
Utah.....	0	0	15,000	3,000	45,000	280,000	0
Nevada.....	0	0	4,920	2,534	25,000	85,500	0
Idaho.....	0	0	2,000	1,000	15,000	130,000	3,487
Washington.....	0	0	11,064	5,675	29,450	1,004,000	3,500
Oregon.....	0	20	18,425	2,750	23,401	536,000	871,000
California.....	7	33	154,230	14,120	650,250	5,067,900	2,730,383

Income and benefactions.—The total income reported by the universities and colleges was \$15,365,612, of which amount 38.1 per cent was derived from students' fees, 34.3 per cent from endowment funds, 17 per cent from State, municipal, and national appropriations, and 10.6 per cent from miscellaneous sources. The institutions in the North Central Division received 61.3 per cent of all State appropriations. The summarized statement of income and benefactions is as follows:

TABLE 12.—*Income of universities and colleges.*

State or Territory.	Income.					Total.	Benefac-tions.
	Tuition fees.	Pro-ductive funds.	State or munici-pal appropria-tions.	United States Govern-ment appropria-tion.	Other sources.		
United States.....	\$5,856,505	\$5,277,052	\$2,095,302	\$515,551	\$1,021,199	\$15,365,612	\$9,025,240
North Atlantic Division.....	2,575,005	2,861,588	239,416	80,130	691,392	6,447,531	2,302,843
South Atlantic Division.....	475,646	386,956	153,612	94,244	197,860	1,308,318	196,505
South Central Division.....	532,871	458,852	65,275	28,201	118,151	1,203,350	302,440
North Central Division.....	2,009,011	1,389,945	1,284,947	172,979	572,388	5,429,270	3,370,249
Western Division.....	263,972	179,711	352,052	140,000	41,408	977,143	2,853,197
North Atlantic Division:							
Maine.....	47,881	54,939	0	0	0	102,820	167,105
New Hampshire.....	34,091	36,960	7,500	0	11,587	90,138	15,127
Vermont.....	7,632	39,294	8,400	27,130	394	82,850	7,450
Massachusetts.....	660,495	743,518	0	0	155,796	1,559,809	277,580
Rhode Island.....	59,374	143,304	0	0	0	202,678	69,224
Connecticut.....	437,626	275,867	10	0	21,028	734,531	400,949
New York.....	713,748	1,100,710	151,006	19,000	321,896	2,306,360	573,264
New Jersey.....	45,610	188,000	0	34,000	100,000	367,610	.....
Pennsylvania.....	568,518	278,996	72,500	0	80,691	1,000,735	792,144
South Atlantic Division:							
Delaware.....	0	4,980	3,000	15,200	1,271	24,451	0
Maryland.....	157,816	120,455	18,500	0	31,353	328,124	20,699
District of Columbia.....	85,000	20,394	0	28,800	22,816	157,010	6,200
Virginia.....	94,175	99,823	40,000	0	63,777	297,775	22,565
West Virginia.....	9,483	6,965	25,700	16,000	234	58,382	3,500
North Carolina.....	60,082	39,647	20,000	.....	24,774	144,503	30,352
South Carolina.....	19,373	32,715	38,190	15,244	16,500	122,022	4,000
Georgia.....	31,755	51,013	4,222	19,000	23,600	129,649	33,922
Florida.....	17,962	10,965	4,000	0	13,475	46,402	75,667
South Central Division:							
Kentucky.....	68,429	69,967	0	0	7,149	145,545	51,725
Tennessee.....	146,518	124,912	2,400	19,000	39,898	332,788	58,776
Alabama.....	64,965	27,100	1,515	0	8,015	101,595	2,025
Mississippi.....	17,000	42,243	8,100	0	10,070	77,413	4,864
Louisiana.....	69,131	114,358	0	9,201	7,500	200,190	151,741
Texas.....	125,894	77,242	46,200	0	28,649	277,985	24,100
Arkansas.....	39,534	3,030	.....	.....	12,500	55,064	9,215
Oklahoma.....	700	0	7,000	0	0	7,700	0
Indian Territory.....	700	0	0	0	4,370	5,070	0
North Central Division:							
Ohio.....	308,757	360,459	153,850	19,000	132,229	974,295	543,247
Indiana.....	230,762	105,224	44,000	0	38,085	418,071	49,010
Illinois.....	458,498	335,098	141,882	34,000	111,707	1,081,185	1,736,742
Michigan.....	172,400	98,382	250,000	0	77,588	598,430	193,731
Wisconsin.....	50,613	77,310	276,095	34,000	60,469	498,487	140,837
Minnesota.....	104,321	80,996	69,500	34,000	51,453	340,270	45,442
Iowa.....	161,137	94,476	67,000	0	23,440	346,053	165,075
Missouri.....	308,310	181,800	14,000	17,979	20,383	542,472	323,513
North Dakota.....	2,008	0	36,900	0	5,870	44,776	9,155
South Dakota.....	22,900	4,044	28,550	0	8,533	64,027	101,757
Nebraska.....	58,167	20,256	118,170	34,000	18,137	248,730	44,840
Kansas.....	131,080	31,900	85,000	0	24,494	272,474	16,000
Western Division:							
Montana.....	5,900	0	0	0	0	5,900	40,000
Wyoming.....	255	188	3,797	19,000	0	23,240	.....
Colorado.....	19,709	21,186	70,000	0	10,477	121,372	1,800
New Mexico.....	0	0	14,000	0	0	14,000	0
Arizona.....	0	0	7,706	34,000	585	42,291	.....
Utah.....	0	0	37,500	0	1,725	39,225	60,000
Nevada.....	0	0	25,000	19,000	0	44,000	0
Idaho.....	0	393	24,412	34,000	0	58,805	5,000
Washington.....	22,149	500	19,500	0	12,690	54,839	5,624
Oregon.....	33,753	24,180	30,000	0	600	88,533	103,400
California.....	182,206	133,264	120,137	34,000	15,331	484,938	2,637,373

From the preceding table we find that the proportion of income derived from the various sources by the several divisions is as follows:

Division.	Proportion of income derived from—				
	Tuition fees.	Productive funds.	State or municipal appropriation.	United States Government.	Other sources.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
United States	38.1	34.3	13.6	3.4	10.6
North Atlantic Division	39.0	44.4	3.7	1.3	10.7
South Atlantic Division	36.4	29.6	11.7	7.2	15.1
South Central Division	44.3	38.1	5.4	2.4	9.8
North Central Division	37.0	25.6	23.7	3.2	10.5
Western Division	27.0	18.4	56.0	14.3	4.3

II.—COLLEGES FOR WOMEN.

DIVISION A.

Institutions.—The total number of colleges for women reporting to the Bureau for the year 1893-94 is 166, of which number 16 are placed in a table by themselves. They are Radcliffe, Smith, Mount Holyoke, and Wellesley, in Massachusetts; Wells, Elmira, Barnard, Rutgers, and Vassar, in New York; Evelyn, in New Jersey; Bryn Mawr, in Pennsylvania; Woman's College of Baltimore, in Maryland; Randolph-Macon Woman's College, in Virginia; Cleveland College for Women, in Ohio; Rockford College, in Illinois; and Mills College, in California. It will be noticed that 11, or 68.8 per cent, of these institutions are located in the North Atlantic Division.

Professors and instructors.—The entire number of professors and instructors reported by the 16 institutions is 513, of which number 473, or 92.2 per cent, are in the regular college departments, and but 27, or 5.3 per cent, in preparatory departments. The remaining 13 instructors are teachers of special studies, as music, art, etc. Of the total number of instructors 280, or 54.8 per cent, are women and 231, or 45.2 per cent, are men.

Students.—The total number of students enrolled in these institutions was 3,986. In the college departments there were 3,463, or 86.9 per cent; in the preparatory departments there were 265, or 6.6 per cent, while 115, or 2.9 per cent, were enrolled in the graduate departments.

Of the total number of students reported as pursuing courses leading to degrees 2,238, or 76.3 per cent, were in courses leading to the A. B. degree; 162, or 5.5 per cent, to the B. S. degree; 491, or 16.7 per cent, to the B. L. degree; 33, or 1.1 per cent, to the Ph. B. degree, and the remainder to other first degrees. Twenty-nine students were reported in pedagogical courses.

The summarized statistics concerning instructors and students are given in the following table:

TABLE 1.—Professors and students in colleges for women, Division A.

State.	Institutions.	Professors and instructors.						Students.									
		Preparatory departments.		Collegiate departments.		Total number.		Preparatory.	Collegiate.	Graduate.	Total number.	In collegiate departments pursuing courses leading to—					In pedagogical course.
		Male.	Female.	Male.	Female.	Male.	Female.					A. B. degree.	B. S. degree.	B. L. degree.	Ph. B. degree.	Other first degrees.	
United States.	16	1	26	225	248	232	281	265	3,463	115	3,986	2,238	162	491	33	9	29
North Atlantic Division	11	1	14	183	210	184	217	42	3,081	108	3,231	1,906	162	441	.....	9	20
South Atlantic Division	2	0	3	22	18	22	21	30	243	4	277	194	.....	.....	.....	.....	.....
North Central Division	2	0	6	19	15	21	21	190	124	3	317	46	.....	34	33	.....	.....
Western Division	1	0	3	1	5	5	22	3	15	.....	161	2	.....	16	.....	.....	.....
North Atlantic Division:																	
Massachusetts	4	0	0	106	133	106	133	0	2,038	38	2,076	1,153	135	433	.....	.....	17
New York	5	0	7	44	63	45	68	29	802	22	853	613	27	5	.....	9	12
New Jersey	1	1	7	13	5	13	7	13	18	0	31	9	.....	3	.....	.....	.....
Pennsylvania	1	0	0	20	9	20	9	0	223	48	271	221	.....	.....	.....	.....	.....
South Atlantic Division:																	
Maryland	1	.....	.....	15	15	15	15	.....	165	4	169	154	.....	.....	.....	.....	.....
Virginia	1	0	3	7	3	7	6	30	78	0	108	40	.....	.....	.....	.....	.....
North Central Division:																	
Ohio	1	0	0	19	4	19	4	0	101	3	104	23	.....	34	33	.....	.....
Illinois	1	0	6	0	11	2	17	190	23	0	213	23	.....	.....	.....	.....	.....
Western Division:																	
California	1	0	3	1	5	5	22	3	15	.....	161	2	.....	16	.....	.....	.....

Preparation of freshmen.—Twelve of the sixteen institutions answered the inquiry concerning the preparation of freshmen, and the results obtained from the figures given are as follows:

TABLE 2.—*Preparation of freshmen in colleges for women, Division A.*

State.	Institutions reporting.	Freshmen.	Per cent of freshmen prepared by—			
			Preparatory departments of colleges.	Private preparatory schools.	Public high schools.	Private study.
1	2	3	4	5	6	7
United States.....	12	900	5.7	37.2	54.4	2.7
North Atlantic Division.....	8	784	3.7	38.5	55.0	2.8
South Atlantic Division.....	1	76	21.1	43.4	32.9	2.6
North Central Division.....	2	34	11.8	.....	88.2	.....
Western Division.....	1	6	33.3	.....	66.7	.....
North Atlantic Division:						
Massachusetts.....	3	538	1.3	33.7	62.6	2.4
New York.....	3	186	10.8	41.9	45.7	1.6
New Jersey.....	1	3	33.3	66.7	.....	.....
Pennsylvania.....	1	57	1.8	71.9	15.8	10.5
South Atlantic Division:						
Maryland.....	1	76	21.1	43.4	32.9	2.6
North Central Division:						
Ohio.....	1	28	.....	.....	100.0	.....
Illinois.....	1	6	66.7	.....	33.3	.....
Western Division:						
California.....	1	6	33.3	.....	66.7	.....

Degrees.—The number of degrees conferred are given in the summarized statement herewith presented:

TABLE 3.—*Degrees conferred in 1893-94 by colleges for women, Division A.*

State.	A. B.	B. L.	B. S.	A. M.	Ph. D.	Mus. B.	Honorary A. M.
United States.....	305	79	76	30	2	4	3
North Atlantic Division.....	282	71	76	27	2	4	3
South Atlantic Division.....	16	.....	.....	1	.....	.....	.....
North Central Division.....	5	4	.....	2	.....	.....	.....
Western Division.....	2	4	.....	.....	.....	.....	.....
North Atlantic Division:							
Massachusetts.....	157	70	72	16	.....	4	3
New York.....	99	.....	4	4	1	.....	.....
New Jersey.....	4	1	.....	.....	.....	.....	.....
Pennsylvania.....	22	.....	.....	7	1	.....	.....
South Atlantic Division:							
Maryland.....	16	.....	.....	1	.....	.....	.....
North Central Division:							
Ohio.....	4	4	.....	2	.....	.....	.....
Illinois.....	1	.....	.....	.....	.....	.....	.....
Western Division:							
California.....	2	4	.....	.....	.....	.....	.....

Property.—The 15 fellowships held by the institutions under consideration are in the possession of the institutions of the North Atlantic Division. Bryn Mawr College has 11 of them. The proportion of property held by the institutions of the several divisions is as follows:

Division.	Institutions.	Fellowships.	Scholarships.	Volumes in libraries.	Apparatus.	Grounds and buildings.	Productive funds.
	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>	<i>Per ct.</i>
North Atlantic Division.....	68.8	100	76.3	89.7	75.1	75.1	84.7
South Atlantic Division.....	12.5	0	16.5	3.7	6.8	12.4	8.0
North Central Division.....	12.5	0	1.2	3.5	16.5	5.2	5.4
Western Division.....	6.2	0	6.0	3.1	1.6	7.3	1.9

The statistics of property by States are given in the following table:

TABLE 4.—*Property held by colleges for women, Division A.*

State.	Fellowships.	Scholarships.	Libraries.		Value of scientific apparatus and libraries.	Value of grounds and buildings.	Amount of productive funds.
			Bound volumes.	Pamphlets.			
United States.....	15	249	143,673	11,080	\$607,407	\$5,501,151	\$3,962,416
North Atlantic Division.....	15	190	128,923	9,855	455,907	4,134,151	3,356,916
South Atlantic Division.....	0	41	5,250	1,000	41,500	682,000	315,000
North Central Division.....	0	3	5,000	125	100,000	285,000	215,500
Western Division.....	0	15	4,500	100	10,000	400,000	75,000
North Atlantic Division:							
Massachusetts.....	4	149	73,037	50	208,062	2,138,136	1,008,149
New York.....	0	28	30,886	1,805	187,845	1,122,015	1,348,767
New Jersey.....	0	5	3,000				
Pennsylvania.....	11	8	22,000	8,000	60,000	874,000	1,000,000
South Atlantic Division:							
Maryland.....	0	41	5,000	1,000	40,000	587,000	225,000
Virginia.....			250		1,500	95,000	90,000
North Central Division:							
Ohio.....						125,000	175,000
Illinois.....	0	3	5,000	125	100,000	160,000	40,500
Western Division:							
California.....	0	15	4,500	100	10,000	400,000	75,000

Income and benefactions.—The total income reported by these institutions was \$1,071,562, of which amount 72.1 per cent was derived from tuition fees, 19.7 per cent from endowment funds, and 8.2 per cent from miscellaneous sources. The proportion of income derived from tuition fees is almost twice the proportion derived from the same source by the coeducational colleges and colleges for men only. It will be noticed that these institutions do not receive any State aid. The statistics concerning income and benefactions are as follows:

TABLE 5.—*Colleges for women, Division A.—Income and benefactions.*

State.	Income.				Benefac- tions.
	Tuition fees.	Productive funds.	Other sources.	Total.	
United States.....	\$772, 501	\$211, 144	\$87, 917	\$1, 071, 562	\$229, 658
North Atlantic Division.....	614, 140	180, 172	88, 248	880, 560	200, 908
South Atlantic Division.....	69, 992	16, 260	1, 400	87, 652	.....
North Central Division.....	37, 869	11, 007	289	49, 745	28, 700
Western Division.....	50, 500	3, 105	0	53, 605	50
North Atlantic Division:					
Massachusetts.....	379, 930	62, 590	28, 282	470, 802	145, 308
New York.....	210, 210	62, 582	57, 996	330, 758	35, 540
Pennsylvania.....	24, 000	55, 000	0	79, 000	20, 000
South Atlantic Division:					
Maryland.....	62, 219	11, 260	1, 400	74, 879	.....
Virginia.....	7, 773	5, 030	.....	12, 773	.....
North Central Division:					
Ohio.....	6, 000	9, 524	0	15, 524	25, 000
Illinois.....	31, 669	2, 083	289	34, 221	8, 700
Western Division:					
California.....	50, 500	3, 105	0	53, 605	50

DIVISION B.—COLLEGES FOR WOMEN.

Students.—The 150 colleges in Division B of the table of colleges for women reported a total attendance of 19,721, of which number 10,395 were reported in collegiate departments. Only 5,236 of the students in collegiate departments were reported as pursuing courses of study leading to degrees. The number of students that were reported as having graduated during the year 1893-94 was 1,536. The statistics concerning professors and students follow:

TABLE 6.—*Professors and students in colleges for women, Division B.*

State.	Professors and Instructors.			Students.												
	Institutions.	Male.	Female.	Primary.	Preparatory.	Collegiate.	Graduate.	Total number.	Graduated in 1893-94.	A. B. degree.	M. R. L. or B. L. degree.	B. S. degree.	Other first-degree.	In pedagogical course.	In music.	In art.
United States.....	150	419	1,528	1,965	4,533	10,395	154	19,721	1,536	2,572	1,753	640	271	554	9,009	3,054
North Atlantic Division.....	15	66	207	91	947	835	16	2,207	186	169	130	10	27	10	724	419
Maine.....	1	4	9	638	964	4,003	51	6,045	604	1,320	213	246	40	211	2,461	1,143
New Hampshire.....	56	139	524	1,014	1,709	3,952	76	7,436	798	1,080	798	296	162	752	2,155	1,065
Massachusetts.....	27	69	306	186	642	1,588	10	3,264	233	268	326	77	42	61	1,560	392
New York.....	2	8	23	36	71	197	1	135	11	17	4	11	.....	20	89	35
New Jersey.....	1	3	9	9	13	.....	.....	22	0	.....	.....	.....	.....	.....	.....	.....
Pennsylvania.....	9	30	103	33	213	500	11	977	93	152	108	10	.....	4	516	186
North Atlantic Division:																
Maryland.....	3	10	32	33	14	159	2	437	37	48	.....	.....	.....	6	56	30
Virginia.....	17	54	151	180	270	1,148	8	1,837	144	124	9	45	25	5	40	29
West Virginia.....	1	0	3	.....	235	523	.....	35	2	.....	.....	.....	.....	.....	97	11
North Carolina.....	9	20	85	77	235	523	.....	1,085	123	83	4	20	.....	7	685	157
South Carolina.....	9	25	86	137	207	805	14	1,223	91	423	90	51	15	.....	15	6
Georgia.....	11	33	112	211	238	1,368	27	2,048	207	642	110	120	.....	199	516	186
South Central Division:																
Kentucky.....	14	30	122	303	357	1,046	7	1,856	97	109	91	89	.....	111	817	188
Tennessee.....	15	44	179	373	498	1,146	36	2,360	122	254	228	72	76	28	890	295
Alabama.....	9	25	93	79	209	582	14	1,080	154	228	330	2	82	19	480	162
Mississippi.....	11	22	80	74	366	684	15	1,196	82	157	316	88	.....	75	500	327
Louisiana.....	3	7	19	101	128	163	1	383	9	30	85	42	4	8	108	32
Texas.....	3	9	27	35	95	311	8	446	38	20	30	.....	.....	.....	342	56
Arkansas.....	1	2	4	49	36	20	.....	105	0	0	0	3	.....	11	18	5

TABLE 6.—Professors and students in colleges for women, Division B—Continued.

State.	Professors and instructors.			Students.												
	Institutions.	Male.	Female.	Primary.	Preparatory.	Collegiate.	Graduate.	Total number.	Graduated in 1893-94.	Pursuing courses leading to—				In pedagogical course.	In music.	In art.
										A. B. degree.	M. E. L. or B. L. degree.	B. S. degree.	Other first de- grees.			
North Central Division:																
Ohio.....	6	14	84	21	240	473	1	823	65	103	150	19			329	72
Indiana.....	1	2	16		95	25		120	1	12		13			40	
Illinois.....	4	8	56	74	135	246	2	690	50	18	45		26	47	311	118
Wisconsin.....	2	3	15	18	32	10		130	2	10					35	8
Minnesota.....	1	3	6		42	21		63	4	6		23			28	6
Missouri.....	11	36	109	43	229	702	7	1,206	106	119	131	22	16	14	709	168
Kansas.....	2	3	19	30	69	111		265	5						48	20
Western Division:																
California.....	2	3	23	36	71	17	1	125	11	17	4	11		20	89	35

Degrees.—The total number of degrees conferred by the institutions in Division B was 1,064, of which number 6 were honorary A. M. degrees. The classification by States is as follows:

TABLE 7.—*Degrees conferred by colleges for women, Division B.*

State.	M. E. L. and B. L.	A. B.	B. S.	A. M.	B. Mus.	B. Paint.	Ph. D.	L. A.	L. S.	M. L. A.	Honorary A. M.
United States	319	414	112	56	124	26	1	2	2	2	6
North Atlantic Division	22	35	1	1	19			2	2	2	
South Atlantic Division	54	212	34	1	57	8					
South Central Division	180	129	52	47	13	18					
North Central Division	63	38	14	7	35		1				6
Western Division			11								
North Atlantic Division:											
Maine	2	2			1			2	2		
New Hampshire										2	
Pennsylvania	20	33	1	1	18						
South Atlantic Division:											
Virginia	18	18	7	1	1						
North Carolina	2	54	2		15						
South Carolina	9	42	1		9	4					
Georgia	25	98	24		32	4					
South Central Division:											
Kentucky	7	17	18	18	2						
Tennessee	56	24	20	12	4						
Alabama	66	62	1	17	6	18					
Mississippi	39	21	10		1						
Louisiana	9										
Texas	3	5	3								
North Central Division:											
Ohio	17	6	6	1	7						
Indiana		1									
Illinois	16	4			9						
Wisconsin	1	4									
Minnesota		2			2						
Missouri	29	19	8	6	17						6
Kansas		2					1				
Western Division:											
California			11								

Property.—The total value of the property owned by the 150 institutions is \$10,009,917, of which amount \$796,737 form endowment funds. The balance is invested in grounds, buildings, and apparatus. The statistics follow:

TABLE 8.—*Property held by colleges for women, Division B.*

State.	Volumes in library.	Value of scientific apparatus.	Value of grounds and buildings.	Amount of productive funds.
United States.....	213, 072	\$305, 701	\$8, 907, 279	\$796, 737
North Atlantic Division.....	43, 900	79, 579	1, 648, 639	217, 812
South Atlantic Division.....	57, 137	64, 550	2, 690, 500	128, 925
South Central Division.....	63, 257	73, 577	2, 448, 140	85, 000
North Central Division.....	43, 278	66, 495	1, 917, 000	365, 000
Western Division.....	5, 500	21, 500	203, 000	0
North Atlantic Division:				
Maine.....	10, 000	9, 000	250, 000	110, 000
New Hampshire.....	2, 000	6, 000	75, 000	30, 350
Massachusetts.....	1, 900	2, 500	140, 000	0
New York.....	5, 800	21, 579	218, 639	18, 402
New Jersey.....	1, 000		40, 000	
Pennsylvania.....	23, 200	40, 500	925, 000	59, 000
South Atlantic Division:				
Maryland.....	5, 555	6, 000	170, 000	5, 000
Virginia.....	13, 812	14, 900	895, 000	7, 500
West Virginia.....	300		8, 000	0
North Carolina.....	9, 720	7, 350	480, 000	10, 425
South Carolina.....	8, 900	11, 200	308, 000	41, 000
Georgia.....	18, 850	25, 100	828, 500	65, 000
South Central Division:				
Kentucky.....	13, 200	16, 050	483, 000	3, 000
Tennessee.....	20, 300	16, 125	768, 000	30, 000
Alabama.....	14, 032	18, 802	458, 640	
Mississippi.....	7, 000	11, 400	342, 000	20, 000
Louisiana.....	4, 500	3, 000	105, 000	32, 000
Texas.....	4, 100	7, 450	263, 000	
Arkansas.....	125	750	27, 500	0
North Central Division:				
Ohio.....	13, 200	18, 000	455, 000	107, 000
Indiana.....	2, 000	2, 000	80, 000	
Illinois.....	8, 490	5, 500	310, 000	2, 000
Wisconsin.....	4, 638	9, 500	85, 000	155, 000
Minnesota.....	1, 500	4, 000	40, 000	26, 000
Missouri.....	10, 250	26, 295	557, 000	75, 000
Kansas.....	3, 200	1, 200	390, 000	
Western Division:				
California.....	5, 500	21, 500	203, 000	0

Income and benefactions.—The total income was reported as \$2,213,629, derived from the following sources: Tuition fees, 84.7 per cent; productive funds, 2.1 per cent; State and municipal appropriations, 2.2 per cent, and miscellaneous sources, 11 per cent. It will be noticed that but a very small proportion of the income of these institutions is derived from productive funds, and that nearly all of the income is paid by the students.

The benefactions for the year amounted to \$139,525.

The summarized statement of income and benefactions follows:

TABLE 9.—*Income of colleges for women, Division B.*

State.	Income.					Benefactions.
	Tuition fees.	Productive funds.	State or municipal appropriations.	All other sources.	Total.	
United States.....	\$1,875,843	\$46,269	\$48,660	\$242,857	\$2,213,629	\$139,525
North Atlantic Division...	367,667	11,693	.....	75,535	454,895	24,800
South Atlantic Division...	529,816	7,256	23,160	56,463	616,695	6,525
South Central Division...	555,560	5,250	25,500	58,159	644,469	45,050
North Central Division...	385,000	22,070	.....	52,700	459,770	63,150
Western Division.....	37,800	.....	.....	.....	37,800	.....
North Atlantic Division:						
Maine.....	9,500	5,600	.....	900	16,000	2,500
New Hampshire.....	8,000	2,700	.....	12,000	22,700	.....
Massachusetts.....	15,000	0	0	60,000	75,000	0
New York.....	80,000	293	.....	.....	80,293	20,300
New Jersey.....	2,000	.....	.....	.....	2,000	.....
Pennsylvania.....	253,167	3,100	.....	2,635	258,902	2,000
South Atlantic Division:						
Maryland.....	60,600	300	.....	5,000	65,900	50
Virginia.....	154,881	450	.....	4,105	159,436	5,000
West Virginia.....	900	.....	.....	.....	900	.....
North Carolina.....	100,525	526	.....	11,300	112,421	1,225
South Carolina.....	65,990	2,080	160	25,058	93,288	250
Georgia.....	146,850	3,900	23,000	11,000	184,750	.....
South Central Division:						
Kentucky.....	120,150	.....	.....	9,600	129,750	20,000
Tennessee.....	211,600	1,800	.....	9,500	222,900	.....
Alabama.....	92,145	.....	.....	24,559	116,704	150
Mississippi.....	59,165	1,000	23,000	9,500	92,665	200
Louisiana.....	10,500	2,450	2,500	2,000	17,450	6,400
Texas.....	59,000	.....	.....	3,000	62,000	18,300
Arkansas.....	3,000	0	0	0	3,000	0
North Central Division:						
Ohio.....	80,500	5,750	.....	32,000	118,250	5,500
Indiana.....	15,000	.....	.....	5,000	20,000	37,000
Illinois.....	102,400	100	0	0	102,500	1,500
Wisconsin.....	16,000	8,750	.....	.....	24,750	.....
Minnesota.....	2,800	1,570	.....	1,100	5,470	1,200
Missouri.....	142,100	5,900	.....	6,100	154,100	14,950
Kansas.....	26,200	.....	.....	8,500	34,700	3,000
Western Division:						
California.....	37,800	.....	.....	.....	37,800	.....

III.—COLLEGES OF AGRICULTURE AND THE MECHANIC ARTS.

The number of colleges of agriculture and the mechanic arts endowed by the acts of Congress of July 2, 1862, and August 30, 1890, is 63. Of this number 14 are for the education of colored students, and of the other 49 two have annexes in which colored students are taught, but whose statistics are incorporated with those of the institutions for white students.

The number of students reported by the colleges of agriculture and mechanic arts was 17,280, of which number 4,568 were in preparatory departments, 12,358 in collegiate departments, and 354 in graduate departments. It will be seen from an examination of the statistics that the proportion of preparatory students in this class of institutions, as in the case of universities and colleges, is least in the North Atlantic Division.

The total receipts for the year 1893-94, as reported by the several institutions, were \$5,991,101.40. Of this amount, \$2,192,386.24, or 36.6 per cent, were received from the United States Government either as income from the funds realized by the sale of lands granted by the act of July 2, 1862, or as cash appropriated by the acts of March 2, 1887, and August 30, 1890.

The statistics concerning these institutions are given, by States and Territories, in the following table:

Summary of statistics of colleges of agriculture and mechanic arts, endorsed by acts of Congress of July 2, 1862, and August 30, 1890.

State or Territory.	Professors and Instruct- ors.						Students.						Property.			
	Preparatory depart- ments.		Collegiate departments.		Preparatory departments.		Collegiate de- partments.		Graduate depart- ments.		Libraries.	Acres under cul- tivation.	Value of farm lands.	Value of buildings and equip- ment.		
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.						
Institutions.	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1																
United States.....	63	185	52	1,233	146	3,487	1,081	9,924	1,806	(60)	250	723,951	188,402	8,707	\$1,688,009	\$17,537,621
North Atlantic Division.....	10	11	5	364	9	218	45	2,582	84	(628)	66	310,835	58,691	899	132,525	5,404,407
South Atlantic Division.....	15	28	9	163	67	1,029	270	1,593	311	22	0	67,764	15,076	1,868	168,970	2,385,450
South Central Division.....	14	34	10	156	5	1,060	329	1,311	210	31	1	67,051	43,927	1,783	304,428	1,932,575
North Central Division.....	13	85	16	377	55	769	183	3,721	898	106	41	207,931	53,245	2,871	941,626	5,784,637
Western Division.....	11	27	12	173	10	411	254	717	305	25	2	80,370	17,463	1,286	140,462	2,020,552
North Atlantic Division:																
Maine.....	1	0	0	20	1	0	0	137	2	0	0	9,200	2,287	120	7,500	217,750
New Hampshire.....	1	0	0	15	0	0	0	54	10	0	0	3,300	65	65	15,000	181,392
Vermont.....	1	0	0	22	0	0	0	97	0	0	0	46,735	1,004	125	10,000	404,221
Massachusetts.....	2	0	0	134	1	0	0	1,310	46	15	0	48,968	13,300	244	40,025	1,282,002
Rhode Island.....	1	0	0	10	4	0	0	69	13	0	0	2,530	9,000	40	10,000	112,560
Connecticut.....	1	0	0	56	0	0	0	559	0	43	0	0	0	0	0	0
New York.....	1	0	0	40	0	0	0	(628)	0	(60)	105	160,913	28,100	105	2,576,542	0
New Jersey.....	1	7	4	28	0	136	25	160	0	2	0	30,369	5,000	200	50,000	630,000
Pennsylvania.....	1	4	1	39	3	82	20	196	13	6	0	8,920	0	0	0	0
South Atlantic Division:																
Delaware.....	2	1	0	14	0	14	2	45	4	0	0	6,548	5,789	94	8,000	135,427
Maryland.....	1	1	0	0	0	35	0	88	0	0	0	1,050	0	0	28,000	57,000
Virginia.....	2	2	0	42	60	34	0	603	248	10	0	9,007	899	750	57,000	690,500
West Virginia.....	2	5	1	14	0	144	27	104	20	0	0	7,497	75	11	2,750	250,033
North Carolina.....	2	3	0	19	0	70	19	153	0	6	0	2,312	123	99	12,000	94,230
South Carolina.....	2	7	6	28	6	609	173	368	3	0	0	2,200	0	516	37,880	351,800
Georgia.....	2	5	0	23	0	43	0	152	0	6	0	26,414	6,250	72	12,000	750,500
Florida.....	2	6	2	14	1	80	49	80	36	0	0	2,136	1,940	186	10,740	65,960
South Central Division:																
Kentucky.....	2	5	1	20	0	119	27	115	65	0	0	2,992	111	50	28,000	155,996
Tennessee.....	1	0	0	23	0	127	2	243	54	6	0	12,478	7,800	118	106,370	215,725
Alabama.....	2	8	0	27	0	181	115	218	4	14	0	10,467	16,406	251	13,000	215,837

Summary of statistics of colleges of agriculture and mechanic arts, endowed by acts of Congress of July 2, 1862, and August 30, 1890—Continued.

State or Territory.	Professors and instruct- ors.						Students.						Property.				
	Institutions.		Preparatory depart- ments.		Collegiate departments.		Preparatory departments.		Collegiate de- partments.		Graduate depart- ments.		Libraries.		Acres under cul- tivation.	Value of farm lands.	Value of buildings and equip- ment.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Libraries.				
													Volumes.	Pam- phlets.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
South Central Division—Continued.																	
Mississippi.....	2	8	0	25	0	322	6	213	0	8	0	6,521	7,416	480	58,996	258,320	
Louisiana.....	2	4	4	19	3	123	22	129	71	0	1	18,904	332	345	41,300	318,479	
Texas.....	2	2	1	26	2	104	115	328	3	3	0	5,350	3,062	329	89,160	423,014	
Arkansas.....	2	5	4	10	0	152	0	41	0	0	0	9,134	8,300	80	9,600	290,180	
Oklahoma.....	1	2	0	6	0	33	42	22	13	0	0	1,205	500	130	10,000	55,000	
North Central Division:																	
Ohio.....	1	11	0	53	0	63	2	411	12	10	4	13,473	7,000	195	67,400	555,000	
Indiana.....	1	6	3	43	6	45	11	532	69	19	7	5,918	7,000	140	70,000	428,000	
Illinois.....	1	4	2	19	0	94	0	334	2	9	0	26,238	5,775	600	73,000	685,000	
Michigan.....	1	0	0	30	0	0	0	336	23	6	1	16,658	4,405	450	47,320	353,430	
Wisconsin.....	1	0	0	34	0	0	0	363	0	11	0	33,269	8,000	60	62,500	900,000	
Minnesota.....	1	5	1	30	2	198	0	125	43	5	0	30,540	8,195	140	375,000	1,007,500	
Iowa.....	1	2	0	31	11	40	6	376	106	7	5	10,381	3,800	300	27,000	428,489	
Missouri.....	2	2	0	32	0	32	9	312	42	0	0	17,692	4,460	137	143,406	221,503	
North Dakota.....	1	10	0	9	0	32	9	16	4	4	3	3,448	8,000	420	30,000	96,500	
South Dakota.....	1	47	10	53	24	243	127	489	386	21	10	25,000	3,610	150	16,000	114,125	
Nebraska.....	1	0	0	25	7	0	0	333	198	14	11	14,862	3,610	250	30,000	650,000	
Kansas.....	1	0	0	25	7	0	0	333	198	14	11	14,862	3,610	250	30,000	347,000	
Western Division:																	
Montana.....	1	2	0	6	1	25	13	53	48	0	0	560	400	126	10,000	9,300	
Wyoming.....	1	1	1	10	0	0	0	11	1	0	0	2,926	1,800	20	9,540	126,500	
Colorado.....	1	1	1	9	2	25	6	113	49	4	1	4,315	7,000	175	15,000	122,000	
New Mexico.....	1	1	1	10	1	30	15	25	14	0	0	2,039	200	75	10,000	64,418	
Arizona.....	1	5	1	12	1	0	0	9	0	0	0	872	2,087	79	4,000	121,500	
Utah.....	1	2	1	10	1	59	32	112	46	0	0	2,403	675	86	21,000	180,000	
Nevada.....	1	4	3	11	0	58	60	35	37	2	0	4,920	2,534	35	18,000	99,750	
Idaho.....	1	10	3	9	2	133	81	12	4	0	0	2,000	1,000	240	10,000	140,075	
Washington.....	1	1	1	10	1	57	33	10	10	0	0	2,852	1,067	200	10,000	75,217	
Oregon.....	1	1	1	15	1	24	12	124	80	0	0	1,703	1,600	100	25,000	135,762	
California.....	1	0	0	71	0	0	0	213	16	19	1	55,780	1,600	100	12,322	985,000	

State or Territory.	Receipts from—				Expenditures for—			
	The State.	United States land-grant act of 1862.	Experiment station act of 1887.	United States endowment act of 1890.	Fees and other sources.	Agriculture and mechanic arts.	Experiment station.	Other departments.
1	18	19	20	21	22	23	24	25
United States.....	\$1,877,017.57	\$581,055.62	\$492,330.62	\$659,000.00	\$1,921,897.59	\$3,001,266.21	\$748,286.58	\$2,152,152.98
North Atlantic Division:								
Maine.....	3,000.00	5,915.00	15,000.00	19,000.00	6,344.00	32,800.00	16,859.00	.....
New Hampshire.....	38,000.00	4,800.00	15,000.00	19,000.00	13,788.56	73,764.51	15,000.00	.....
Vermont.....	6,000.00	8,130.00	15,000.00	19,000.00	28,019.83	31,583.40	19,218.88	21,532.20
Massachusetts.....	20,000.00	12,277.97	15,000.00	19,000.00	317,970.84	362,062.32	15,000.00	.....
Rhode Island.....	20,000.00	0	15,000.00	65,000.00	8,664.81	48,686.22	18,080.16	.....
Connecticut.....	0	10.00	0	0	110,590.24	112,981.69	.....	.....
New York.....	50,000.00	19,000.00	11,250.00	19,000.00	640,346.34	(a)	14,877.58	676,840.18
New Jersey.....	0	6,924.00	15,000.00	19,000.00	8,752.43	25,979.00	15,000.00	8,697.43
Pennsylvania.....	75,326.57	25,637.43	15,000.00	19,000.00	28,268.28	143,350.54	27,945.18	.....
South Atlantic Division:								
Delaware.....	3,000.00	4,980.00	15,000.00	19,000.00	2,245.90	20,836.58	15,000.00	10,781.46
Maryland.....	8,381.37	6,141.30	15,000.00	19,000.00	23,135.83	67,090.82	15,199.71	.....
Virginia.....	10,500.00	30,896.08	15,000.00	19,000.00	143,632.70	179,774.53	28,421.23	.....
West Virginia.....	34,190.00	6,964.65	15,000.00	19,000.00	2,304.05	76,348.94	24,335.51	.....
North Carolina.....	10,000.00	7,500.00	0	19,000.00	2,540.72	56,308.13	.....	.....
South Carolina.....	50,000.00	11,488.00	15,000.00	19,000.00	17,853.87	83,711.32	15,000.00	12,982.85
Georgia.....	8,000.00	16,954.14	0	19,000.00	823.36	47,831.57	.....	.....
Florida.....	3,500.00	9,107.00	15,000.00	19,000.00	1,827.28	27,023.58	15,044.48	5,675.00
South Central Division:								
Kentucky.....	5,000.00	9,900.00	15,000.00	19,000.00	46,087.65	59,939.93	18,435.46	13,383.75
Tennessee.....	0	23,760.00	15,000.00	19,000.00	13,523.91	45,253.81	15,000.00	.....
Alabama.....	10,976.20	20,280.00	15,000.00	19,000.00	19,565.21	43,877.72	23,953.26	10,328.74
Mississippi.....	24,571.25	11,583.25	15,000.00	19,000.00	9,679.19	56,037.63	15,000.00	7,640.47
Louisiana.....	20,950.00	9,115.69	15,000.00	19,000.00	6,963.80	46,385.85	15,000.00	9,857.62
Texas.....	72,250.00	14,280.00	15,000.00	19,000.00	15,823.50	51,290.00	15,000.00	69,773.50
Arkansas.....	20,150.00	10,400.00	15,000.00	19,000.00	3,965.73	18,713.18	16,444.33	41,890.03
Oklahoma.....	.....	.....	15,000.00	19,000.00	.....	32,101.19	15,000.00	.....
North Central Division:								
Ohio.....	86,079.43	31,450.53	0	19,000.00	34,462.91	105,251.36	17,006.82	78,332.13
Indiana.....	80,000.00	17,000.00	15,000.00	19,000.00	47,230.38	150,018.21	150,018.21	.....
Illinois.....	141,831.75	27,314.89	15,000.00	19,000.00	40,330.17	(a)	15,546.54	217,885.94
Michigan.....	16,862.50	44,527.26	15,000.00	19,000.00	12,501.55	88,589.08	15,142.07	.....
Wisconsin.....	276,095.00	16,961.00	15,000.00	19,000.00	53,402.00	78,312.00	21,250.00	280,896.00

Summary of statistics of colleges of agriculture and mechanic arts, endorsed by acts of Congress of July 2, 1862, and August 30, 1890—Continued.

State or Territory.	Receipts from—				Expenditures for—			
	The State.	United States land-grant act of 1862.	Experiment station act of 1887.	United States endowment act of 1890.	Fees and other sources.	Agriculture and mechanic arts.	Experiment station.	Other departments.
1	18	19	20	21	22	23	24	25
North Central Division—Continued.								
Minnesota.....	195,285.28	16,297.54	11,250.00	19,000.00	112,139.91	46,462.73	29,749.67	277,760.33
Iowa.....	22,341.34	48,395.09	15,000.00	19,000.00	44,000.00	134,830.65	15,000.00	15,000.00
Missouri.....	27,079.77	16,225.00	15,000.00	19,000.00	5,051.82	47,233.03	16,826.71	16,880.54
North Dakota.....	55,000.00	0	14,830.62	19,000.00	3,394.89	73,039.12	16,769.59	0
South Dakota.....	11,300.00	0	15,000.00	19,000.00	2,644.31	34,380.79	15,000.00	137,170.00
Nebraska.....	118,170.00	29,460.78	15,000.00	19,000.00	6,107.44	(a)	15,000.00	15,000.00
Kansas.....	77,310.88	0	15,000.00	19,000.00	1,289.00	138,407.21	15,000.00	15,000.00
Western Division:								
Montana.....	3,797.08	0	15,000.00	19,000.00	632.77	20,032.48	15,000.00	15,000.00
Wyoming.....	47,000.00	4,437.07	15,000.00	19,000.00	5,792.35	20,478.89	15,263.27	11,201.90
Colorado.....	6,400.00	0	15,000.00	19,000.00	576.76	68,611.95	19,212.48	15,149.60
New Mexico.....	7,705.99	0	15,000.00	19,000.00	585.50	22,602.36	15,149.60	15,149.60
Arizona.....	24,000.00	0	15,000.00	19,000.00	3,665.01	9,421.81	14,994.08	15,128.61
Utah.....	25,000.00	0	15,000.00	19,000.00	0	26,309.47	15,000.00	19,904.86
Nevada.....	24,412.17	0	15,000.00	19,000.00	383.03	19,000.00	15,000.00	14,794.07
Idaho.....	16,363.81	9,294.42	15,000.00	19,000.00	1,196.39	23,407.80	15,000.00	150.00
Washington.....	120,137.15	43,624.63	15,000.00	19,000.00	2,754.75	48,890.81	15,000.00	15,000.00
Oregon.....			15,000.00	19,000.00	74,250.23	43,546.02	15,000.00	192,544.37
California.....			15,000.00	19,000.00		95,689.70	14,579.97	

a Included under column 25.

IV.—SCHOOLS OF TECHNOLOGY.

The number of independent schools of technology, including the United States Military and Naval Academies and excluding the institutions endowed by the acts of Congress of July 2, 1862, and August 30, 1890, is 20. Of this number 4 report themselves as having preparatory departments. The Armour Institute at Chicago, Ill., does not classify its students. The principal statistics concerning these institutions are as follows:

Number of institutions.....	20
Professors:	
Preparatory departments—	
Male.....	15
Female.....	2
Collegiate departments—	
Male.....	358
Female.....	5
Total number—	
Male.....	401
Female.....	27
Students:	
Preparatory departments—	
Male.....	381
Female.....	25
Collegiate departments—	
Male.....	3,052
Female.....	35
Graduate departments—	
Male.....	53
Female.....	0
Total number—	
Male.....	4,097
Female.....	499
Students in degree courses.....	2,020
Per cent in:	
A. B. course.....	.74
B. S. course.....	35.65
C. E. course.....	18.91
M. E. course.....	18.66
E. M. course.....	12.38
E. E. course.....	7.33
Other degree courses.....	6.93
Libraries:	
Bound volumes.....	252,261
Pamphlets.....	17,859
Number of scholarships.....	276
Value of scientific apparatus and libraries.....	\$570,211
Value of grounds and buildings.....	5,259,256
Amount of productive funds.....	8,700,000
Benefactions.....	56,084

Income:	
From tuition fees	217, 825
From productive funds.....	360, 657
From State or municipal appropriation.....	188, 225
From United States Government appropriation.....	815, 851
From all other sources.....	23, 509
Total income.....	1, 606, 067

The entire incomes of the United States Naval Academy and United States Military Academy are derived from annual appropriations by the Congress of the United States. The amounts thus appropriated were \$815,851, not including the amounts paid to cadets, which are as follows: At the United States Military Academy each cadet is paid \$540 per annum, while at the United States Naval Academy the pay of a cadet is \$500, which, with one ration, makes his entire pay for the year amount to \$609. With the money thus received the cadets are required to pay for their board, clothing, washing, books, etc.

Degrees.—The degrees in course conferred by the technological schools were as follows: C. E., 60; E. M., 12; M. E., 56; B. S., 127; B. Agr., 8; M. S., 6; A. B., 1; E. E., 21; A. C., 6. The honorary degrees conferred were 1 Sc. D., 2 Ph. D., and 1 LL. D.

V.—PROFESSIONAL SCHOOLS.

TABLE 1.—General summary of statistics of professional schools, for 1893-94.

Class of schools.	Schools.	Instructors.	Students.	Graduates.
Theological.....	147	963	7,658	1,462
Law.....	67	621	7,311	2,454
Medical.....	152	4,195	21,802	5,133
Dental.....	35	794	4,152	877
Pharmaceutical.....	35	283	3,658	988
Veterinary.....	8	118	554	171
Nurse training.....	66	.....	2,710	970
Total.....	510	6,974	47,845	12,055

TABLE 2.—Summary of statistics of schools of theology, for 1893-94.

State.	Schools.	Professors and instructors.		Students.			Value of grounds and buildings.	Endowment funds.	Benefactions received during the year.
		Regular.	Special or assistant.	In attendance.	Graduating.	Students having degrees in letters or science.			
United States.....	147	701	262	7,658	1,462	2,185	\$11,092,004	\$18,753,962	\$1,152,116
North Atlantic Division.....	47	285	115	2,865	654	1,231	5,448,944	9,957,123	268,332
South Atlantic Division.....	21	88	20	917	158	126	1,490,500	1,891,000	91,300
South Central Division.....	16	62	27	777	99	82	598,000	1,347,000	162,976
North Central Division.....	56	235	90	3,034	545	740	3,174,123	4,621,339	616,508
Western Division.....	7	30	10	65	6	6	380,437	937,500	13,000
North Atlantic Division:									
Maine.....	2	10	2	65	10	4	125,000	275,000	6,250
Massachusetts.....	7	55	27	444	107	256	723,151	1,566,809	50,000
Connecticut.....	3	25	22	198	54	16	452,000	1,097,305	81,375
New York.....	13	81	31	855	177	362	2,212,429	3,639,047	74,008
New Jersey.....	5	29	11	466	121	277	1,128,200	1,715,697	14,368
Pennsylvania.....	17	85	22	837	185	316	808,164	1,763,265	92,331
South Atlantic Division:									
Maryland.....	5	32	5	390	75	2	496,500	0	0
District of Columbia.....	4	18	8	83	5	2	630,000	400,000	35,000
Virginia.....	3	15	0	184	42	62	130,000	660,000	0
North Carolina.....	3	8	1	70	8	13	0,000	.....	.....
South Carolina.....	4	10	0	97	16	39	50,000	280,000	6,000
Georgia.....	2	5	6	93	12	8	175,000	551,000	50,300
South Central Division:									
Kentucky.....	4	26	6	465	59	29	298,000	950,000	106,500
Tennessee.....	7	29	16	223	32	53	300,000	380,000	52,000
Alabama.....	2	4	0	38	5	0	.....	.....	.....
Louisiana.....	1	1	0	10	1	0	.....	.....	0
Texas.....	2	3	5	41	2	0	.....	17,000	4,476
North Central Division:									
Ohio.....	13	59	27	438	93	117	392,500	823,000	91,800
Indiana.....	3	13	1	148	19	5	.....	.....	.....
Illinois.....	14	73	42	1,245	249	358	1,917,329	3,033,615	492,142
Michigan.....	8	9	8	118	4	17	.....	86,000	.....
Wisconsin.....	4	23	0	314	39	27	100,000	100,000	25,000
Minnesota.....	6	20	3	183	47	45	265,000	452,500	1,000
Iowa.....	6	14	8	209	17	19	84,294	60,943	4,566
Missouri.....	5	14	4	348	69	140	350,000	65,281	2,000
Nebraska.....	2	10	2	31	8	12	65,000	0	.....
Western Division:									
Colorado.....	2	7	3	30	3	5	97,000	250,000	0
Oregon.....	1	4	2	4	.....	.....	.....	.....	.....
California.....	4	19	5	81	3	1	283,437	687,500	13,000

TABLE 3.—Statistics of theological schools, by denominations, for 1893-94.

Denomination.	Schools.	Instruct- ors.	Students.	Value of grounds and buildings.	Endow- ment.
Presbyterian.....	24	183	1,375	a \$2,656,031	b \$6,372,618
Roman Catholic.....	18	128	1,250	(c)	(c)
Baptist.....	16	111	1,101	d 957,827	a 2,535,242
Lutheran.....	19	66	938	e 1,122,102	a 393,106
Methodist.....	21	126	924	g 943,600	a 1,990,800
Congregational.....	12	116	626	b 1,233,229	e 3,387,689
Protestant Episcopal.....	13	86	444	1,870,601	2,580,056
Christian.....	6	23	366	(c)	(c)
Reformed.....	2	34	183	(c)	(c)
Evangelical.....	2	6	97		
Universalist.....	2	27	96	175,000	346,000
Nonsectarian.....	2	18	96		
Hebrew.....	1	14	58	35,000	60,000
United Brethren.....	1	5	49	40,000	85,000
Unitarian.....	1	9	42	37,714	282,000
Moravian.....	1	6	9		
New Jerusalem (Swedenborgian).....	1	5	4	60,000	200,000

a Five schools did not report this item.

b Three schools not reporting.

c No report from several schools.

d Seven schools not reporting.

e Four schools not reporting.

f Eight schools not reporting.

g Eleven schools not reporting.

TABLE 4.—Summary of statistics of schools of law, for 1893-94.

States.	Schools.	Professors and instructors.		Students.	
		Regular.	Special or assistant.	In attend- ance.	Gradu- ating.
United States.....	67	380	241	a 7,311	2,454
North Atlantic Division.....	12	118	72	2,597	684
South Atlantic Division.....	16	71	20	1,372	484
South Central Division.....	11	30	15	445	208
North Central Division.....	22	123	105	2,514	995
Western Division.....	6	38	20	383	83
Massachusetts.....	2	32	3	611	135
Connecticut.....	1	7	25	188	72
New York.....	7	64	39	1,508	413
Pennsylvania.....	2	15	5	200	64
Maryland.....	2	7	7	232	73
District of Columbia.....	4	35	7	739	251
Virginia.....	3	7	0	230	60
West Virginia.....	1	2	0	47	23
North Carolina.....	2	6	0	70	46
South Carolina.....	1	1	0	6	6
Georgia.....	3	13	6	42	25
Kentucky.....	1	3	0	48	26
Tennessee.....	5	12	7	145	74
Alabama.....	1	3	0	18	16
Mississippi.....	1	1	4	20	12
Louisiana.....	1	5	0	75	34
Texas.....	1	2	2	108	35
Arkansas.....	1	4	2	31	11
Ohio.....	5	33	7	360	144
Indiana.....	2	6	5	112	35
Illinois.....	5	27	16	410	124
Michigan.....	2	13	26	668	300
Wisconsin.....	1	6	5	163	81
Minnesota.....	1	6	12	315	103
Iowa.....	2	10	13	166	116
Missouri.....	2	7	16	176	25
Nebraska.....	1	13	0	65	25
Kansas.....	1	2	5	79	42
Colorado.....	2	17	26	95	25
Oregon.....	2	16	2	83	28
California.....	2	5	1	205	30

a Fifty-four of these were women.

TABLE 5.—*Summary of statistics of schools of medicine, dentistry, pharmacy, and for nurses and veterinarians, for 1893-94.*

	Schools.	Professors and instructors.		Students.				
		Regu- lar.	Special or assist- ant.	Men enrolled.	Women enrolled.	Total enroll- ment.	Gradu- ating.	Per cent gradu- ating.
United States.....	296	3, 169	2, 221	28, 796	4, 080	32, 876	8, 139	.....
A.—BY CLASSES.								
Regular.....	109	1, 853	1, 224	16, 099	902	17, 001	4 486	25. 5
Homeopathic.....	19	310	168	1, 315	351	1, 666	399	23. 9
Eclectic.....	9	129	32	717	86	803	205	25. 5
Physio-medical.....	3	39	23	77	15	92	30	32. 6
Graduate.....	10	200	200	1, 531	65	1, 596	13	.....
Preparatory.....	2	16	1	44	0	44	.....	.....
Total medical.....	152	2, 547	1, 048	20, 383	1, 419	21, 802	5, 133	.....
Dental.....	35	362	432	4, 064	88	4, 152	877	21. 1
Pharmaceutical.....	33	187	96	3, 570	88	3, 658	988	27. 0
Nurse training.....	66	.....	.....	225	2, 485	2, 710	970	35. 8
Veterinary.....	8	73	45	554	0	554	171	30. 9
B.—BY GEOGRAPHICAL DIVISIONS.								
North Atlantic.....	89	816	849	10, 137	2, 307	12, 444	2, 965	23. 8
South Atlantic.....	40	351	291	3, 307	166	3, 473	885	24. 9
South Central.....	49	284	166	3, 566	637	4, 203	1, 566	37. 2
North Central.....	103	1, 508	817	10, 942	806	11, 748	2, 539	21. 6
Western.....	15	210	98	844	164	1, 008	204	20. 2
C.—BY STATES AND CLASSES.								
<i>Medical schools.</i>								
Regular:								
Maine.....	1	11	2	116	0	116	26	.....
New Hampshire.....	1	8	5	135	0	135	29	.....
Vermont.....	1	13	12	190	0	190	54	.....
Massachusetts.....	3	91	60	636	52	688	166	.....
Connecticut.....	1	12	14	78	0	78	15	.....
New York.....	9	181	211	2, 238	111	2, 349	486	.....
Pennsylvania.....	5	148	138	1, 874	192	2, 066	490	.....
Maryland.....	6	88	73	1, 142	41	1, 183	266	.....
District of Columbia.....	4	47	65	462	24	486	106	.....
Virginia.....	3	40	16	322	0	322	66	.....
North Carolina.....	2	12	4	90	0	99	14	.....
South Carolina.....	1	16	0	70	0	70	19	.....
Georgia.....	3	33	12	304	0	304	128	.....
Kentucky.....	4	55	39	1, 295	0	1, 295	622	.....
Tennessee.....	8	89	64	1, 105	1	1, 106	488	.....
Alabama.....	1	8	14	102	0	102	34	.....
Louisiana.....	2	32	10	379	3	382	107	.....
Texas.....	1	9	7	127	0	127	0	.....
Arkansas.....	1	15	8	72	0	72	14	.....
Ohio.....	10	155	85	945	46	991	195	.....
Indiana.....	3	48	45	240	21	261	73	.....
Illinois.....	4	122	70	1, 296	119	1, 415	358	.....
Michigan.....	3	77	29	717	81	798	179	.....
Wisconsin.....	1	21	2	30	0	30	2	.....
Minnesota.....	2	52	17	241	12	253	45	.....
Iowa.....	6	79	24	539	40	579	116	.....
Missouri.....	12	184	129	1, 305	45	1, 350	247	.....
Nebraska.....	2	46	7	112	9	121	19	.....
Kansas.....	1	16	6	81	14	95	7	.....
Colorado.....	3	58	23	114	36	150	28	.....
Oregon.....	2	30	10	53	9	62	12	.....
California.....	3	67	23	330	46	376	69	.....
North Atlantic Division.....	21	464	442	5, 267	355	5, 622	1, 266	.....
South Atlantic Division.....	19	236	170	2, 399	65	2, 464	599	.....
South Central Division.....	17	208	142	3, 080	4	3, 084	1, 271	.....
North Central Division.....	44	800	414	5, 456	387	5, 843	1, 241	.....
Western Division.....	8	145	56	497	91	588	109	.....
United States.....	109	1, 853	1, 224	16, 099	902	17, 001	4, 486	25. 5

TABLE 5.—Summary of statistics of schools of medicine, dentistry, pharmacy, and for nurses and veterinarians, for 1893-94—Continued.

	Schools.	Professors and instructors.		Students.				
		Regu- lar.	Special or assist- ant.	Men enrolled.	Women enrolled.	Total enroll- ment.	Gradu- ating.	Per cent gradu- ating.
C.—BY STATES AND CLASSES.— continued.								
Medical schools.—Continued.								
Homeopathic:								
Massachusetts.....	1	18	21	82	49	131	15	.....
New York.....	2	40	29	140	43	183	57	.....
Pennsylvania.....	1	14	12	281	0	281	68	.....
Maryland.....	1	15	14	23	6	29	12	.....
District of Columbia.....	1	7	3	14	1	15	7	.....
Kentucky.....	1	17	1	9	8	17	2	.....
Ohio.....	2	37	6	149	29	178	47	.....
Illinois.....	4	82	50	451	124	575	137	.....
Michigan.....	1	5	5	20	5	25	9	.....
Minnesota.....	1	14	0	4	13	17	2	.....
Iowa.....	1	6	9	50	16	66	15	.....
Missouri.....	2	33	14	63	34	97	21	.....
California.....	1	22	4	29	23	52	7	.....
North Atlantic Division...	4	72	62	593	92	595	140	.....
South Atlantic Division...	2	22	17	37	7	44	19	.....
South Central Division...	1	17	1	9	8	17	2	.....
North Central Division...	11	177	84	737	221	958	231	.....
Western Division.....	1	22	4	29	23	52	7	.....
United States.....	19	310	168	1,315	351	1,666	399	23.9
Eclectic:								
New York.....	1	17	3	63	15	78	11	.....
Georgia.....	1	11	7	60	0	60	23	.....
Ohio.....	2	20	9	303	23	326	90	.....
Illinois.....	1	20	5	92	13	105	30	.....
Indiana.....	1	19	.....	36	5	41	4	.....
Missouri.....	1	12	3	69	10	79	21	.....
Nebraska.....	1	12	5	31	7	38	12	.....
California.....	1	18	0	63	13	76	14	.....
North Atlantic Division...	1	17	3	63	15	78	11	.....
South Atlantic Division...	1	11	7	60	0	60	23	.....
North Central Division...	6	83	22	531	58	589	157	.....
Western Division.....	1	18	0	63	13	76	14	.....
United States.....	9	129	32	717	86	803	205	25.5
Graduate.								
New York.....	3	55	101	858	30	888	13	.....
Pennsylvania.....	2	62	51	104	19	123	.....	.....
Louisiana.....	1	.....	.....	.....	.....	.....	.....	.....
Illinois.....	3	83	48	552	16	568	.....	.....
Missouri.....	1	.....	.....	17	.....	17	.....	.....
North Atlantic Division...	5	117	152	962	49	1,011	13	.....
South Central Division...	1	.....	.....	.....	.....	.....	.....	.....
North Central Division...	4	83	48	569	16	585	.....	.....
United States.....	10	200	200	1,531	65	1,596	13	.....
Dentistry.								
Massachusetts.....	2	19	41	220	5	225	49	.....
New York.....	1	16	23	294	0	294	62	.....
Pennsylvania.....	3	18	70	771	22	793	206	.....
Maryland.....	2	26	41	291	0	291	81	.....
District of Columbia.....	3	20	35	79	2	81	16	.....

TABLE 5.—Summary of statistics of schools of medicine, dentistry, pharmacy, and for nurses and veterinarians, for 1893-94—Continued.

	Schools.	Professors and instructors.		Students.				
		Regu- lar.	Special or assist- ant.	Men enrolled.	Women enrolled.	Total enroll- ment.	Gradu- ating.	Per cent gradu- ating.
C.—BY STATES AND CLASSES— continued.								
Dentistry—Continued.								
Virginia.....	1	9	2	22	0	22		
Georgia.....	2	6	10	149	0	149	30	
Kentucky.....	1	9	5	92	0	92	9	
Tennessee.....	3	18	6	165	2	167	31	
Alabama.....	1	7	5	27	0	27	3	
Ohio.....	2	12	6	178	4	182	38	
Indiana.....	1	12	4	101	5	106	23	
Illinois.....	4	84	85	813	20	832	140	
Michigan.....	2	21	15	215	8	223	65	
Minnesota.....	1	14	5	43	1	44	6	
Iowa.....	1	20	0	143	8	151	32	
Missouri.....	3	36	39	318	3	321	65	
Colorado.....	1	8	1	17	1	18	3	
California.....	1	7	33	126	7	133	18	
North Atlantic Division.....	6	53	140	1,285	27	1,312	317	
South Atlantic Division.....	8	61	88	541	2	543	127	
South Central Division.....	5	24	16	284	2	286	43	
North Central Division.....	14	199	154	1,811	49	1,860	369	
Western Division.....	2	15	34	143	8	151	21	
United States.....	35	362	432	4,064	88	4,152	877	21.1
Pharmacy.								
Massachusetts.....	1	6	5	245	9	254	17	
New York.....	4	20	16	520	8	527	194	
Pennsylvania.....	2	11	3	688	10	698	204	
Maryland.....	1	3	1	127	0	127	36	
District of Columbia.....	2	9	4	95	2	97	32	
Virginia.....	1	3	3	16	0	16		
North Carolina.....	1	2	1	13	0	13	0	
Kentucky.....	2	7	6	87	10	97	19	
Tennessee.....	2	13	1	35	5	40	15	
Louisiana.....	1	5	0	31	1	32	11	
Ohio.....	4	19	11	348	12	360	118	
Indiana.....	1	3	4	81	4	85	36	
Illinois.....	2	15	4	681	9	690	138	
Michigan.....	2	14	8	75	3	78	31	
Wisconsin.....	1	17	7	39	3	42	12	
Minnesota.....	1	3	2	4	0	4	1	
Iowa.....	2	11	5	67	4	71	9	
Missouri.....	2	11	5	247	3	250	69	
Kansas.....	1	5	6	50	5	55	12	
Colorado.....	1	4	0	17	0	17	4	
California.....	1	6	4	95	0	95	30	
North Atlantic Division.....	7	37	24	1,462	27	1,489	415	
South Atlantic Division.....	5	17	9	251	2	253	68	
South Central Division.....	5	25	7	153	16	169	45	
North Central Division.....	16	98	52	1,592	43	1,635	426	
Western Division.....	2	10	4	112	0	112	34	
United States.....	35	187	96	3,570	88	3,658	988	27
Nurse training.								
Vermont.....	1			0	27	27	5	
Massachusetts.....	6			37	360	397	143	
Rhode Island.....	1			5	36	41	17	
Connecticut.....	1			0	72	72	12	
New York.....	19			143	730	873	332	
New Jersey.....	3			0	88	88	38	
Pennsylvania.....	9			0	429	429	162	
Maryland.....	1			0	28	28	13	
District of Columbia.....	2			0	57	57	16	
Georgia.....	1			0	5	5	0	

TABLE 5.—*Summary of statistics of schools of medicine, dentistry, pharmacy, and for nurses and veterinarians, for 1893-94—Continued.*

	Schools.	Professors and instructors.		Students.				
		Regu- lar.	Special or assist- ant.	Men enrolled.	Women enrolled.	Total enroll- ment.	Gradu- ating.	Per cent gradu- ating.
C.—BY STATES AND CLASSES— continued.								
Nurse training—Continued.								
Texas.....	1	.....	.....	0	17	17	8	.....
Indiana.....	1	.....	.....	0	18	18	7	.....
Illinois.....	8	.....	.....	31	297	328	100	.....
Michigan.....	2	.....	.....	0	68	68	38	.....
Minnesota.....	3	.....	.....	0	67	67	6	.....
Iowa.....	1	.....	.....	0	4	4	0	.....
Missouri.....	3	.....	.....	0	44	44	18	.....
Ohio.....	1	.....	.....	9	65	74	23	.....
Wisconsin.....	1	.....	.....	0	44	44	13	.....
California.....	1	.....	.....	0	29	29	19	.....
North Atlantic Division.....	40	.....	.....	185	1,742	1,927	709	.....
South Atlantic Division.....	4	.....	.....	0	90	90	29	.....
South Central Division.....	1	.....	.....	0	17	17	8	.....
North Central Division.....	20	.....	.....	40	607	647	205	.....
Western Division.....	1	.....	.....	0	29	29	19	.....
United States.....	66	.....	.....	225	2,485	2,710	970	.....

VI.—NORMAL SCHOOLS.

The number of normal students, or students in various institutions pursuing training courses for teachers, in 1894 was 80,767, according to the returns made to this office. These students were distributed as follows: In 160 public normal schools, 37,899; in 238 private normal schools, 27,995; in pedagogical or teachers' training courses in 173 universities and colleges, 5,500; in 153 public high schools, 5,041; in 137 private high schools, 4,332. It will thus be seen that normal students were reported from 861 distinct institutions. The 398 public and private normal schools sent out 8,271 graduates. The other institutions did not report separately their normal graduates nor the number of students completing pedagogical courses.

A special effort was made by this Bureau in 1894 to secure reports from all new normal schools and from the many institutions of this class known to have been in existence for several years but from which this office had never received statistical reports. The result was an enormous increase in the number of normal students reported, an increase from 52,008 in 1893 to 80,767 in 1894. In 1893 there were 27,926 students reported in 121 public normal schools and in 1894 the number was 37,147, reported by 160 schools. In 1893 the number of students reported by 39 private normal schools was 7,286, and in 1894 there were 238 schools, reporting 27,995 students. In 1893 there were 5,232 normal students reported in 155 colleges and universities, and in 1894 the number reported was 5,500 in 173 of these higher institutions. In 1893 the number of normal students reported in public high schools

was 4,803, and in 1894 the number was 5,041. There was a decrease in the number of normal students reported in private high schools between 1893 and 1894. The number in the former year was 6,761 and in the latter 4,332. This is easily explained. Many of the private high schools and academies had been gradually modifying their courses of study from year to year until those institutions had become practically normal schools, and in very many instances the names of long-established academies had been changed to "normal school," indicating beyond question the change in the scope of the institution. In such cases the school has been transferred from the list of private secondary schools to that of private normal schools. It is readily seen that the falling off of 2,429 in the number of normal students in private high schools is not a real loss. The apparent loss is simply a number transferred, which makes up a portion of the 20,709 increase of students in private normal schools.

In this chapter are ten tables summarizing the statistics of normal schools and showing the distribution of normal students. Tables 1, 2, and 3 show the number of teachers and students, amount of income, value of equipment, etc., for public normal schools, and Tables 4, 5, and 6 give the same items for private normal schools. The statistics of the 398 normal schools are given in detail in Part IV of this report.

PUBLIC NORMAL SCHOOLS.

Table 1 shows that in the 160 public normal schools there were 1,561 teachers instructing normal students, and 551 teachers engaged wholly in other departments. It also shows that in the total enrollment of 56,849 there were 37,899 normal students. Of these 11,606, or 30.62 per cent, were males, and 26,293, or 69.38 per cent, females. These 160 schools turned out 5,952 normal graduates, or 15.70 per cent of the number of normal students. The last column of Table 1 shows that 2,713 colored students were included in the total of 37,899. These colored students were nearly all in public normal and industrial schools in the two Southern divisions. More than three-fourths of the normal students reported in the 160 public normal schools were in the North Atlantic and North Central divisions.

Table 2 gives the number of pupils in model schools connected with the public normal schools as 23,842. This number doubtless includes a large proportion of the 13,392 given in the same table as elementary pupils. There were 933 students in business courses, and 7,291 classed as secondary students.

Table 3 is a financial exhibit of the public normal schools for the year ended June, 1894. The aggregate of appropriations from States, counties, and cities for support was \$1,996,271. Tuition fees amounted to \$393,329. The third column gives \$334,273 as the aggregate of unclassified sums reported and money received from miscellaneous sources. As a number of schools reported only total amount received for support it is evident that a part of the \$334,273 properly belongs in the first column and probably a smaller proportion in the second

column. The total amount received for support by the 160 public normal schools was \$2,723,873. This was an average of \$17,023 to a school. In the North Atlantic Division the average was \$21,938 to a school, in the South Atlantic \$11,614, in the South Central \$9,134, in the North Central \$19,770, and in the Western Division \$17,628. The 14 public normal schools in the State of New York received \$425,557 for support, or an average of \$30,397 to a school. The 5 schools in Virginia received \$165,954, or an average of \$33,191 to a school.

Public normal schools received appropriations from States, counties, and cities for building purposes aggregating \$1,583,399. More than half of this amount was received by schools in the North Atlantic Division—\$856,670—the North Central Division receiving \$374,799 and the Western Division \$279,000. In the South Atlantic Division the appropriations for building amounted to \$49,580 and in the South Central to \$23,350.

The aggregate value of buildings and grounds is shown to be \$15,571,846, and the value of other property \$1,289,100. The value of buildings and grounds in the North Atlantic Division was \$8,152,186, or more than half the total; in the North Central the value was \$3,588,179, in the Western \$1,435,000, in the South Atlantic \$1,430,200, and in the South Central \$966,281.

Table 10 is a review of appropriations for public normal schools for the past five years, showing the amount received for support and the amount for building each year. For 1893-94 both items were larger than for any previous year—\$1,996,271 for support and \$1,583,399 for building. The largest previous aggregate for support was \$1,567,082 in 1891-92, and the largest amount previously reported for building was \$900,533 in 1889-90. The increase of appropriations for support in 1894 over 1893 was very large in each geographical division, the increase being about 100 per cent in the two Southern sections. The increase of appropriations for building was very large for the North Atlantic, the North Central, and Western divisions, but there was a slight decrease for the South Central Division. In the South the demands for support are more urgent than the needs for building.

PRIVATE NORMAL SCHOOLS.

The 238 private normal schools reported in 1894 were very unevenly distributed among the States. The North Central Division had 110 of these schools, the South Central 59, the South Atlantic 46, the North Atlantic 13, and the Western Division 10. Iowa alone reports 23 private normal schools and Ohio 20. By an inspection of the second column of Table 4 it will be seen that thirteen States and Territories were without private normal schools, and nine States reported only one each.

In the 238 schools reporting, there were 1,086 teachers instructing normal students and 918 teachers wholly engaged in other departments. In a total enrollment of 62,934 there were 27,995 normal students. Of

these 14,176, or 50.64 per cent, were males, and 13,819, or 49.36 per cent, were females, as shown in Table 7. It was noted in connection with public normal schools that the female students constituted nearly 70 per cent of the number in training courses for teachers. The 238 private schools reported 2,319 graduates, or 8.28 per cent of the number of normal students. Compare this with the 15.70 per cent graduating from the public normal schools as given in Table 7.

The North Atlantic Division had only 1,385 students in teachers' training courses in private normal schools as against 16,424 in public normals. The North Central had 19,454 in private normals and 12,056 in public normals. In the South Atlantic the numbers were 2,728 for the private and 3,334 for the public normals; in the South Central 3,421 private and 3,374 public, and in the Western Division 1,007 private and 2,711 public. Of the 5,522 colored students in private normal schools 3,589 were in the South Atlantic and 1,703 in the South Central Division. These colored students were in normal and industrial schools which are supported by churches or benevolent societies. A few of these schools are of high grade, but many could scarcely be classed as secondary schools, but they are normal schools educating colored men and women to become teachers of elementary schools for their own race.

Table 5 gives the number of pupils in the model schools connected with the private normal schools as 3,520. There were in these schools 19,078 pupils in elementary studies, 6,395 students in business courses, and 9,178 in other courses of study of secondary grade.

Table 6 shows that the private normal schools received appropriations from States, counties, or cities amounting to \$24,544. The aggregate reported as received from tuition fees was \$564,628. The amount from all other sources, including unclassified sums from tuition, State appropriations, and productive funds, was \$174,009. The total received for support was \$763,175. Of the \$76,127 derived from productive funds, a portion was expended for support and the remainder devoted to permanent improvements.

These schools received from public appropriations \$135,910 for buildings. The total value of buildings and grounds was \$3,750,259, and of other property \$719,938.

IN OTHER INSTITUTIONS.

Table 8 shows the distribution of the 14,873 normal students reported in other institutions than public and private normal schools. In 173 colleges and universities 5,500 students were in pedagogical courses. These students were not reported to this office by sex, but a large proportion of them are males. In 153 public high schools there were 5,041 normal students—1,390 males and 3,651 females. In 137 private high schools 4,332 normal students were reported—2,000 males and 2,332 females.

Of the normal students in higher institutions nearly half, or 2,707, were found in the North Central Division, Ohio alone reporting 744.

Of the 1,187 reported from the South Central Division Tennessee had 473. Of the 5,041 normal students in public high schools 2,184 were in the North Atlantic Division, New York reporting 1,054 and Pennsylvania 770. In the North Central Division there were 1,529, Iowa reporting 438 and Kansas 423. Of the 4,332 normal students in private high schools 1,727 were reported from the North Central Division, Ohio alone having 411 and Iowa 455.

The last column of Table 8 shows that normal students outside of public and private normal schools were distributed geographically as follows: In the North Atlantic Division, 3,361; South Atlantic, 2,297; South Central, 2,332; North Central, 5,963, and Western Division, 920.

Table 9 is a recapitulation of the totals in preceding tables, showing the distribution of the 80,767 normal students in the five classes of institutions by divisions and by States.

NORMAL SCHOOLS FOR TEN YEARS.

The table below is a statistical review of public and private normal schools for the past ten years. The growth since 1884 has been steady. The apparent decrease in the number of students in the public normal schools in 1888, as shown in the fourth column, was due to a change in classification. For the preceding three years all students had been reported, but since that time normal students only have been included in that column. In 1884 there were 132 private normal schools, but subsequently about 100 of these were transferred to the list of private secondary schools. In 1894 many of these schools again appear as normal schools.

Public and private normal schools.

Year.	Public.				Private.			
	Schools.	Instruct- ors.	Normal students.	Normal grad- uates.	Schools.	Instruct- ors.	Normal students.	Grad- uates.
1884-85.....	131	1,234	26,000	3,162	132	842	17,068	1,366
1885-86.....	117	1,115	25,750	3,440	36	279	6,197	299
1886-87.....	124	1,235	26,594	3,557	26	238	6,873	258
1887-88.....	133	1,189	17,319	4,381	41	a 365	6,534	219
1888-89.....	136	a 1,485	22,618	4,564	43	a 370	4,487	315
1889-90.....	135	1,182	26,917	4,413	46	274	b 7,897	c 824
1890-91.....	131	1,361	31,792	5,060	46	257	b 10,515	c 966
1891-92.....	138	1,436	32,727	5,849	40	235	5,710	597
1892-93.....	121	1,301	27,926	4,491	39	268	7,286	552
1893-94.....	160	1,561	37,899	5,952	238	1,086	27,995	2,319

a Includes instructors in all the courses.

b Includes students in all the courses.

c Includes all the graduates, normal and others.

The above table shows that the number of public normal schools increased from 131 in 1885 to 160 in 1894, the number of normal instructors from 1,234 to 1,561, the number of students from 26,000 to 37,899, and the number of graduates from 3,162 to 5,952. In the ten years the private normal schools increased from 132 to 238, the number of instructors from 842 to 1,086, the number of students from 17,068 to 27,995, and the number of graduates from 1,366 to 2,319.

PEDAGOGY IN HIGHER INSTITUTIONS.

Many universities and colleges, recognizing the necessity of professional training for teachers, have organized departments of pedagogy or prescribed certain courses of study for those who may expect to become teachers after leaving college. In 1891 the Bureau made its first inquiry regarding students in pedagogical courses in these higher institutions. That year the number of such students reported was 3,978. Unfortunately the number of institutions reporting was not recorded. In 1893 the number of institutions reporting was 155 and the number of students 5,232. For the year ended June, 1894, this item was reported by 173 colleges and universities, and the number of students in pedagogical courses was 5,500, an increase of more than 38 per cent in three years.

The following table gives the name and location of each college or university reporting pedagogical students for the year 1893-94 and the number reported by each:

Location.	Institution.	Normal students.
Alabama:		
Blountville	Blount College.....	17
Lafayette	Lafayette College.....	15
Selma	Selma University.....	44
Huntsville.....	Huntsville Female College.....	19
Arkansas:		
Clarksville	Arkansas Cumberland College.....	17
Little Rock	Arkansas Baptist College.....	8
Do	Little Rock University.....	12
Do	Philander Smith College.....	3
Mountain Home.....	Mountain Home Baptist College.....	71
Conway	Central Baptist College.....	11
California:		
Berkeley.....	University of California.....	57
College City.....	Pierce Christian College.....	14
Santa Rosa.....	Pacific Methodist College.....	6
Stanford University.....	Leland Stanford Junior University.....	37
Woodbridge	San Joaquin Valley College.....	13
San Jose.....	College of Notre Dame.....	20
District of Columbia:		
Washington	Gallaudet College.....	5
Florida:		
Leesburg	Florida Conference College.....	3
St. Leo.....	St. Leo Military College.....	2
Georgia:		
Atlanta.....	Atlanta University.....	99
Do.....	Morris Brown College.....	25
Birmingham.....	Methodist Episcopal College.....	16
Gainesville	Georgia Female Seminary.....	20
Lagrange	Lagrange Female College.....	21
Milledgeville.....	Georgia Normal and Industrial College.....	158
Illinois:		
Abingdon.....	Hedding College.....	17
Carthage.....	Carthage College.....	10
Effingham	Austin College.....	52
Evanston	Northwestern University.....	11
Fulton	Northern Illinois College.....	40
Naperville.....	Northwestern College.....	16
Quincy	Chaddock College.....	10
Rock Island.....	Augustana College.....	8
Upper Alton.....	Shurtleff College.....	3
Westfield	Westfield College.....	9
Jacksonville.....	Illinois Female College.....	7
Knoxville.....	St. Mary's School.....	40
Indian Territory:		
Bacone.....	Indian University.....	9
Indiana:		
Hanover.....	Hanover College.....	5
Merom.....	Union Christian College.....	18

Location.	Institution.	Normal stu- dents.
Indiana—Continued.		
Moore Hill.....	Moore Hill College.....	104
Ridgeville.....	Ridgeville College.....	15
Upland.....	Taylor University.....	25
Iowa:		
Charles City.....	German-English College.....	19
Hopkinton.....	Lenox College.....	3
Indianola.....	Simpson College.....	56
Mount Pleasant.....	German College.....	15
Sioux City.....	University of the Northwest.....	45
Storm Lake.....	Buena Vista College.....	87
Toledo.....	Western College.....	35
Kansas:		
Baldwin.....	Baker University.....	39
Enterprise.....	Central College.....	20
Holton.....	Campbell University.....	65
Lecompton.....	Lane University.....	2
Lindsborg.....	Bethany College.....	48
Ottawa.....	Ottawa University.....	4
Salina.....	Kansas Wesleyan University.....	66
Wichita.....	Wichita University.....	10
Kentucky:		
Berea.....	Berea College.....	6
Columbia.....	Columbia Christian College.....	15
Hopkinsville.....	South Kentucky College.....	25
Lancaster.....	Garrard College.....	10
Harrodsburg.....	Young Ladies' College.....	106
Winchester.....	Winchester Female College.....	5
Louisiana:		
New Orleans.....	New Orleans University.....	39
Do.....	Straight University.....	12
Mansfield.....	Mansfield Female College.....	8
Maine:		
Kents Hill.....	Maine Wesleyan Female College.....	6
Maryland:		
Baltimore.....	Morgan College.....	82
Massachusetts:		
Worcester.....	Clark University.....	5
Wellesley.....	Wellesley College.....	17
Michigan:		
Alma.....	Alma College.....	5
Benzonia.....	Benzonia College.....	18
Hillsdale.....	Hillsdale College.....	70
Olivet.....	Olivet College.....	27
Minnesota:		
Excelsior.....	Northwestern Christian College.....	13
Minneapolis.....	University of Minnesota.....	29
St. Peter.....	Gustavus Adolphus College.....	60
Winnebago City.....	Parker College.....	18
Mississippi:		
Daleville.....	Cooper-Huddleston College.....	5
Holly Springs.....	Rust University.....	72
University.....	University of Mississippi.....	18
Columbus.....	Mississippi Industrial Institute and College.....	67
Pontotoc.....	Chickasaw Female College.....	8
Missouri:		
Albany.....	Central Christian College.....	70
Do.....	Northwest Missouri College.....	18
Bowling Green.....	Pike College.....	16
Cameron.....	Missouri Wesleyan College.....	43
Carthage.....	Carthage Collegiate Institute.....	4
Columbia.....	University of the State of Missouri.....	112
Lawson.....	Presbyterian College of Upper Missouri.....	10
Trenton.....	Avalon College.....	34
Warrenton.....	Central Wesleyan College.....	9
Fulton.....	Synodical Female College.....	14
Nebraska:		
Bellevue.....	University of Omaha.....	12
Bethany.....	Cotner University.....	25
Crete.....	Doane College.....	15
Fairfield.....	Fairfield College.....	37
Neligh.....	Gates College.....	76
University Place.....	Nebraska Wesleyan University.....	15
York.....	York College.....	6
Nevada:		
Reno.....	State University of Nevada.....	40
New Mexico:		
Albuquerque.....	University of New Mexico.....	30
New York:		
New York.....	University of the City of New York.....	88
Elmira.....	Elmira College.....	12

Location.	Institution.	Normal students.
North Carolina:		
Charlotte.....	Biddle University.....	40
Guilford College.....	Guilford College.....	20
Raleigh.....	Shaw University.....	189
Rutherford College.....	Rutherford College.....	18
Salisbury.....	Livingstone College.....	52
Lenoir.....	Davenport Female College.....	7
North Dakota:		
Fargo.....	Fargo College.....	12
Ohio:		
Akron.....	Buchtel College.....	24
Alliance.....	Mount Union College.....	135
Athens.....	Ohio University.....	105
Defiance.....	Defiance College.....	34
Delaware.....	Ohio Wesleyan University.....	81
Findlay.....	Findlay College.....	36
Hillsboro.....	Hillsboro College.....	50
Hiram.....	Hiram College.....	75
Hopedale.....	Hopedale Normal College.....	75
Lima.....	Lima College.....	55
New Concord.....	Muskingum College.....	16
Richmond.....	Richmond College.....	20
Tiffin.....	Heidelberg University.....	7
West Farmington.....	Farmington College.....	21
Wilberforce.....	Wilberforce University.....	60
Oregon:		
Salem.....	Willamette University.....	26
University Park.....	Portland University.....	27
Pennsylvania:		
Annuville.....	Lebanon Valley College.....	14
Jefferson.....	Monongahela College.....	67
New Berlin.....	Central Pennsylvania College.....	7
Philadelphia.....	Central High School.....	16
Pittsburg.....	Duquesne College.....	30
Chambersburg.....	Wilson College.....	4
South Carolina:		
Columbia.....	Allen University.....	28
Orangeburg.....	Claflin University.....	68
South Dakota:		
East Pierre.....	Pierre University.....	25
Hot Springs.....	Black Hills College.....	8
Mitchell.....	Dakota University.....	56
Redfield.....	Redfield College.....	51
Tennessee:		
Harriman.....	American Temperance University.....	20
Huntingdon.....	Southern Normal University.....	60
Knoxville.....	Knoxville College.....	80
Do.....	University of Tennessee.....	47
Milligan.....	Milligan College.....	40
Mossy Creek.....	Carson and Newman College.....	26
Nashville.....	Central Tennessee College.....	35
Do.....	Fisk University.....	87
Sewanee.....	University of the South.....	8
Spencer.....	Burritt College.....	42
Columbia.....	Columbia Athenaeum.....	10
Rogersville.....	Rogersville Synodical College.....	8
Somerville.....	Somerville Female Institute.....	10
Texas:		
Brenham.....	Evangelical Lutheran College.....	22
Brownwood.....	Howard Payne College.....	15
Campbell.....	Henry College.....	13
Fort Worth.....	Fort Worth University.....	8
Marshall.....	Wiley University.....	24
Tehuacana.....	Trinity University.....	4
Waco.....	Paul Quinn College.....	6
Virginia:		
Bridgewater.....	Bridgewater College.....	5
New Market.....	Polytechnic Institute.....	8
Lynchburg.....	Randolph-Macon Woman's College.....	7
Staunton.....	Wesleyan Female Institute.....	8
Winchester.....	Valley Female College.....	2
Washington:		
Burton.....	Vashon College.....	28
Seattle.....	University of Washington.....	59
Tacoma.....	Puget Sound University.....	6
West Virginia:		
Barboursville.....	Barboursville College.....	57
Morgantown.....	West Virginia University.....	21
Wisconsin:		
Ripon.....	Ripon College.....	151
Wyoming:		
Laramie.....	University of Wyoming.....	21

TABLE 1.—Summary of statistics of public normal schools.

SCHOOLS, INSTRUCTORS, AND STUDENTS.

State or Territory.	Schools.	Teachers.		Total enrollment.			Normal students.			Normal graduates.	Colored students included in column 10.
		For normal students.	Wholly for other departments.	Male.	Female.	Total.	Male.	Female.	Total.		
1	2	3	4	5	6	7	8	9	10	11	12
United States.....	160	1,561	551	19,702	37,147	56,849	11,606	26,293	37,899	5,952	2,713
North Atlantic Division.....	53	685	250	6,836	16,126	22,962	4,400	12,024	16,424	2,916	35
South Atlantic Division.....	27	176	87	1,832	3,276	5,108	1,098	2,236	3,334	396	1,250
North Central Division.....	29	173	90	2,791	3,000	5,791	1,474	1,900	3,374	483	1,382
Western Division.....	39	418	91	7,278	12,310	19,588	4,012	8,044	12,056	1,668	46
	12	104	21	965	2,435	3,400	622	2,089	2,711	489	0
South Atlantic Division:											
Maine.....	5	26	6	237	637	874	227	627	854	143	0
New Hampshire.....	1	6	6	0	86	86	0	86	86	27	0
Vermont.....	3	21	0	96	455	551	96	445	541	94	0
Massachusetts.....	7	83	40	66	1,245	1,311	61	1,171	1,232	244	7
Rhode Island.....	1	10	6	199	0	199	199	0	199	29	1
Connecticut.....	4	31	51	7	646	653	7	419	426	124	0
New York.....	14	209	59	1,935	6,626	8,561	892	4,447	5,339	940	8
New Jersey.....	3	28	24	336	922	1,258	50	569	639	180	8
Pennsylvania.....	15	271	64	3,960	5,509	9,469	2,868	4,240	7,108	1,135	11
South Atlantic Division:											
Delaware.....	1	9	.....	33	396	429	20	358	378	97	.....
Maryland.....	2	13	0	3	74	77	3	74	77	76	2
District of Columbia.....	5	53	55	693	778	1,471	288	494	782	61	535
Virginia.....	7	35	11	570	553	1,123	514	487	1,001	52	51
West Virginia.....	7	42	6	322	955	1,277	161	610	771	61	644
North Carolina.....	1	7	.....	59	0	59	59	0	59	32	0
South Carolina.....	2	10	11	75	411	486	15	168	183	27	0
Georgia.....	2	7	4	77	109	186	38	45	83	10	13
Florida.....	2	7	4	77	109	186	38	45	83	10	13
South Central Division:											
Kentucky.....	6	16	20	781	992	1,773	132	203	335	35	114
Tennessee.....	1	22	4	193	315	508	193	315	508	144	.....
Alabama.....	7	65	46	1,147	1,061	2,208	533	575	1,108	113	825
Mississippi.....	5	17	6	519	510	1,029	97	70	167	32	202
Louisiana.....	1	13	0	43	154	197	43	154	197	29	0
Texas.....	2	23	5	290	456	746	267	393	660	94	0
Arkansas.....	6	17	15	550	436	986	161	122	283	36	241
Oklahoma.....	1	5	.....	48	68	116	48	68	116	0	0
Indian Territory.....	1	5	.....	48	68	116	48	68	116	0	0
North Central Division:											
Ohio.....	4	29	0	75	454	529	25	379	404	161	3
Indiana.....	3	39	2	561	909	1,473	552	891	1,446	50	16
Illinois.....	3	44	16	1,269	1,538	2,807	378	739	1,117	143	17
Michigan.....	2	30	15	435	933	1,368	259	763	1,022	190	0
Wisconsin.....	5	66	19	813	1,459	2,272	455	1,057	1,512	207	0
Minnesota.....	5	58	8	509	1,290	1,899	253	830	1,083	281	1
Iowa.....	4	27	7	510	822	1,332	297	594	891	148	0
Missouri.....	7	55	15	1,991	3,078	5,069	994	1,314	2,308	268	0
North Dakota.....	2	16	1	218	343	561	94	148	242	3	0
South Dakota.....	2	17	5	161	311	472	107	221	328	38	0
Nebraska.....	1	14	1	148	343	491	148	343	491	83	0
Kansas.....	1	23	2	495	830	1,325	450	782	1,212	87	9
Western Division:											
Montana.....	1	16	5	143	372	515	88	275	363	35	.....
Wyoming.....	1	2	.....	44	32	76	44	32	76	0	0
Colorado.....	1	3	0	29	62	91	25	58	83	14	0
New Mexico.....	1	3	0	29	62	91	25	58	83	14	0
Arizona.....	1	3	0	29	62	91	25	58	83	14	0
Utah.....	1	3	0	29	62	91	25	58	83	14	0
Nevada.....	1	3	0	29	62	91	25	58	83	14	0
Idaho.....	1	3	0	29	62	91	25	58	83	14	0
Washington.....	2	14	2	213	338	551	86	192	278	28	0
Oregon.....	3	22	4	383	413	796	226	314	540	88	0
California.....	4	47	10	153	1,218	1,371	153	1,218	1,371	324	0

TABLE 2.—*Summary of statistics of public normal schools.*

STUDENTS AND COURSES OF STUDY.

State or Territory.	Pupils in model schools.			Elementary pupils.			Students in business courses.			Secondary students in other courses.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
1	2	3	4	5	6	7	8	9	10	11	12	13
United States.....	10,826	13,016	23,842	6,272	7,120	13,392	431	562	993	2,032	5,259	7,291
North Atlantic Division.....	5,229	6,565	11,794	1,774	2,259	4,033	146	85	231	586	2,723	3,309
South Atlantic Division.....	747	908	1,655	327	424	751	18	189	207	253	517	770
South Central Division.....	706	830	1,536	1,550	1,329	2,879	71	184	255	475	503	978
North Central Division.....	3,671	4,111	7,782	2,429	2,853	5,282	149	90	239	615	1,434	2,049
Western Division.....	473	602	1,075	192	255	447	47	14	61	103	82	185
North Atlantic Division:												
Maine.....	126	135	261	0	0	0	0	0	0	10	10	20
New Hampshire.....	106	142	248									
Vermont.....	25	35	60					0	0	10	0	10
Massachusetts.....	795	339	1,134	0	70	70	0	0	0	5	4	9
Rhode Island.....	200	200	400				0	0	0	0	0	0
Connecticut.....	865	947	1,812	0	205	205	0	0	0	0	22	22
New York.....	1,772	3,265	5,037	796	1,064	1,860	10	20	30	237	2,130	2,367
New Jersey.....	414	419	833	286	300	586		0	0	0	33	33
Pennsylvania.....	926	1,083	2,009	692	620	1,312	136	65	201	324	524	848
South Atlantic Division:												
Delaware.....												
Maryland.....												
District of Columbia.....	375	373	748				0	0	0	0	0	0
Virginia.....	255	345	600	106	98	204	1	1	2	173	311	484
West Virginia.....	0	0	0	19	24	43	13	4	17	24	38	62
North Carolina.....	2	8	10	115	211	326	0	60	60	46	74	120
South Carolina.....	30	70	100									
Georgia.....	65	90	155	50	25	75	4	124	128	10	94	104
Florida.....	20	22	42	37	66	103	0	0	0			
South Central Division:												
Kentucky.....	223	243	466	490	428	918	38	172	210	191	189	380
Tennessee.....	62	107	169									
Alabama.....	163	243	406	458	266	724	12	10	22	144	210	354
Mississippi.....	194	171	365	372	347	719	16	0	16	90	20	50
Louisiana.....	57	50	107				0	0	0	0	0	0
Texas.....	0	0	0	23	63	86	0	0	0	0	0	0
Arkansas.....	7	16	23	277	225	502	5	2	7	110	84	194
Oklahoma.....												
Indian Territory.....												
North Central Division:												
Ohio.....	669	634	1,303				0	0	0	50	75	125
Indiana.....	345	270	615	12	15	27	0	0	0	0	0	0
Illinois.....	599	571	1,170	858	777	1,635	0	0	0	33	22	55
Michigan.....	272	268	540	176	170	346	0	0	0	0	0	0
Wisconsin.....	358	404	762	358	402	760	0	0	0	0	0	0
Minnesota.....	533	630	1,163	346	460	806	0	0	0	0	0	0
Iowa.....	245	278	523	113	121	234	72	29	101	28	78	106
Missouri.....	318	359	677	465	507	972	65	38	103	494	1,230	1,724
North Dakota.....	19	272	291	19	272	291	0	0	0	5	23	28
South Dakota.....	162	215	377	37	61	98	12	23	35	5	6	11
Nebraska.....	106	142	248				0	0	0	0	0	0
Kansas.....	45	68	113	45	68	113						
Western Division:												
Montana.....												
Wyoming.....												
Colorado.....	40	82	122	40	82	122				15	15	30
New Mexico.....	0	0	0									
Arizona.....	0	0	0									
Utah.....												
Nevada.....												
Idaho.....							0	0	0	0	0	0
Washington.....	127	146	273	127	146	273	0	0	0	0	0	0
Oregon.....	37	40	77	25	37	62	43	10	53	87	64	151
California.....	269	334	603									

TABLE 3.—Summary of statistics of public normal schools.

EQUIPMENT AND INCOME.

State or Territory.	Appropriation from: State, county, or city for support.	Received from tuition.	From other sources and unclassified.	Total received for support.	Amount received from productive funds.	Appropriation from State, county, or city for building.	Value of buildings and grounds.	Value of other property.
1	2	3	4	5	6	7	8	9
United States	\$1,996,271	\$393,329	\$334,273	\$2,723,873	\$39,825	\$1,583,399	\$15,571,846	\$1,289,100
North Atlantic Division:	907,010	233,265	22,457	1,162,732	0	856,070	8,152,186	126,000
South Atlantic Division:	121,460	22,948	69,263	313,671	20,625	49,580	1,450,200	379,000
South Central Division:	119,949	23,349	121,590	264,888	0	23,350	996,281	10,500
North Central Division:	651,824	98,961	20,263	771,048	19,200	374,799	3,588,179	773,600
Western Division:	196,028	14,806	700	211,534	0	279,000	1,435,000	0
North Atlantic Division:								
Maine	28,450	2,175	375	29,000	0	12,500	93,500	0
New Hampshire.....	12,000	250	0	12,250	0	0	80,000	0
Vermont.....	13,039	1,849	1,600	16,488	0	10,300	30,000	0
Massachusetts.....	122,164	30	0	122,194	0	276,200	975,000	0
Rhode Island.....	16,000	0	0	16,000	0	0	60,000	0
Connecticut.....	79,656	0	0	79,656	0	125,000	290,000	0
New York.....	397,523	17,382	10,652	425,557	0	97,793	2,727,426	0
New Jersey.....	34,083	26,060	0	60,143	0	10,000	273,000	114,000
Pennsylvania.....	206,095	185,519	9,830	401,444	0	324,877	3,623,260	12,000
South Atlantic Division:								
Delaware.....	0	0	0	0	0	0	150,000	0
Maryland.....	10,500	7,303	0	17,803	0	0	1,500	0
District of Columbia.....	0	0	0	0	0	0	0	0
Virginia.....	27,950	3,075	134,929	165,954	20,625	5,050	763,000	379,000
West Virginia.....	18,718	2,142	2,682	24,542	0	20,000	263,000	0
North Carolina.....	29,235	4,890	9,752	43,877	0	4,630	84,700	0
South Carolina.....	7,250	88	2,000	9,338	0	0	0	0
Georgia.....	23,207	5,450	3,900	32,557	0	2,500	138,500	0
Florida.....	3,600	0	16,000	19,600	0	7,400	29,500	0
South Central Division:								
Kentucky.....	23,588	1,235	5,865	30,688	0	2,500	34,531	0
Tennessee.....	1,500	5,000	40,000	46,500	0	0	390,000	0
Alabama.....	23,411	9,232	64,240	96,883	0	1,300	326,500	10,500
Mississippi.....	3,950	3,523	912	8,385	0	0	17,500	0
Louisiana.....	12,500	0	2,514	15,014	0	1,250	55,000	0
Texas.....	35,000	0	2,500	37,500	0	3,000	100,000	0
Arkansas.....	12,500	3,759	5,559	21,818	0	300	82,750	0
Oklahoma.....	7,500	600	0	8,100	0	15,000	50,000	0
Indian Territory.....	0	0	0	0	0	0	0	0
North Central Division:								
Ohio.....	800	250	0	1,050	0	0	3,000	0
Indiana.....	42,700	2,400	0	45,100	0	40,000	275,300	0
Illinois.....	96,104	15,696	1,006	112,806	0	0	390,000	1,600
Michigan.....	62,298	5,901	322	68,521	4,200	20,000	275,479	0
Wisconsin.....	120,911	11,004	0	131,915	0	20,000	468,000	0
Minnesota.....	82,000	18,622	500	101,122	0	116,000	575,000	0
Iowa.....	27,875	9,484	500	37,859	0	3,000	128,900	1,000
Missouri.....	142,561	24,888	2,935	170,384	0	104,479	967,000	0
North Dakota.....	20,000	0	0	20,000	0	18,229	70,000	500,000
South Dakota.....	26,250	2,236	0	28,486	0	3,100	95,000	0
Nebraska.....	21,200	0	0	21,200	0	0	130,500	0
Kansas.....	9,125	8,380	15,000	32,505	15,000	50,000	180,000	271,000
Western Division:								
Montana.....	0	0	0	0	0	0	0	0
Wyoming.....	0	0	0	0	0	0	0	0
Colorado.....	35,000	0	0	35,000	0	35,000	150,000	0
New Mexico.....	3,500	0	0	3,500	0	12,000	0	0
Arizona.....	7,200	800	0	8,000	0	8,000	12,000	0
Utah.....	0	0	0	0	0	0	0	0
Nevada.....	0	0	0	0	0	0	0	0
Idaho.....	0	0	0	0	0	0	0	0
Washington.....	37,500	0	0	37,500	0	135,000	108,000	0
Oregon.....	18,628	8,906	700	28,134	0	11,000	65,000	0
California.....	94,300	5,100	0	99,400	0	78,000	1,100,000	0

TABLE 4.—Summary of statistics of private normal schools.

SCHOOLS, INSTRUCTORS, AND STUDENTS.

State or Territory.	Teachers.			Total enrollment.			Normal students.			Normal graduates.	Colored students included in column 10.
	Schools.	For normal students.	Wholly for other departments.	Male.	Female.	Total.	Male.	Female.	Total.		
1	2	3	4	5	6	7	8	9	10	11	12
United States.....	238	1,086	918	33,159	29,775	62,934	14,176	13,819	27,995	2,319	5,522
North Atlantic Division..	13	54	57	1,177	1,199	2,376	640	745	1,385	69	2
South Atlantic Division..	46	168	154	3,722	4,729	8,451	1,166	1,562	2,728	181	3,589
South Central Division..	59	202	219	5,666	6,124	11,790	1,620	1,801	3,421	376	1,703
North Central Division..	110	612	445	21,851	16,899	38,750	10,267	9,187	19,454	1,610	84
Western Division.....	10	50	43	743	824	1,567	483	524	1,007	83	144
North Atlantic Division:											
Maine.....	1	3	3	100	40	140	21	30	51	0	0
New Hampshire.....											
Vermont.....											
Massachusetts.....	2	5	2	10	50	60	9	46	55		0
Rhode Island.....											
Connecticut.....	1	9	13	117	178	295	0	21	21	0	
New York.....	1	1	0	0	23	23	0	23	23	23	2
New Jersey.....											
Pennsylvania.....	8	36	39	950	908	1,858	610	625	1,235	37	0
South Atlantic Division:											
Delaware.....	1	3	3	33	21	54	0	7	7	6	
Maryland.....	3	11	2	76	32	108	68	25	93	6	0
District of Columbia..	1	9		146	57	203	112	57	169		
Virginia.....	5	21	18	177	300	477	87	196	283	29	222
West Virginia.....	4	14	8	305	315	620	193	198	391	7	126
North Carolina.....	11	40	45	874	1,192	2,066	221	375	596	28	969
South Carolina.....	8	22	41	922	1,197	2,119	141	277	418	51	620
Georgia.....	10	31	28	959	1,397	2,356	274	358	632	40	1,564
Florida.....	3	17	9	230	218	448	70	69	139	14	88
South Central Division:											
Kentucky.....	14	31	33	1,033	1,063	2,096	399	363	762	57	0
Tennessee.....	16	64	85	2,203	2,017	4,220	567	591	1,158	141	761
Alabama.....	2	8	5	78	180	258	39	76	115	2	258
Mississippi.....	15	63	50	1,419	1,486	2,905	345	361	706	114	206
Louisiana.....											
Texas.....	8	25	38	726	1,162	1,888	203	323	526	56	335
Arkansas.....	4	11	8	207	216	423	67	87	154	6	143
Oklahoma.....											
Indian Territory.....											
North Central Division:											
Ohio.....	20	105	94	4,283	2,342	6,625	2,084	1,304	3,388	147	2
Indiana.....	14	127	47	4,685	3,727	8,412	2,892	2,164	5,056	754	8
Illinois.....	8	36	32	1,568	1,172	2,740	723	661	1,384	181	3
Michigan.....	6	28	22	1,194	1,372	2,566	462	860	1,322	55	0
Wisconsin.....	2	15	8	222	128	350	34	23	57	13	0
Minnesota.....	3	12	5	322	96	418	165	73	238	28	0
Iowa.....	23	101	85	3,401	3,052	6,453	1,221	1,412	2,633	115	3
Missouri.....	15	70	49	1,950	1,680	3,630	1,328	1,156	2,484	139	50
North Dakota.....	1	2	3	100	20	120	30	20	50		
South Dakota.....	2	13		194	298	492	194	298	492	3	
Nebraska.....	7	50	63	2,782	1,888	4,670	686	754	1,440	100	13
Kansas.....	9	53	37	1,150	1,124	2,274	448	402	850	69	5
Western Division:											
Montana.....	1	3	5	65	65	130	14	16	30	3	0
Wyoming.....	1	3	0	14	16	30	2	5	7	0	1
Colorado.....	1	8	0	3	70	73	3	70	73	13	0
New Mexico.....											
Arizona.....											
Utah.....	2	16	21	590	424	1,014	447	241	688	8	0
Nevada.....											
Idaho.....											
Washington.....											
Oregon.....											
California.....	5	20	17	17	249	320	17	192	209	59	148

TABLE 5.—Summary of statistics of private normal schools.

STUDENTS AND COURSES OF STUDY.

State or Territory.	Pupils in model schools.			Elementary pupils.			Students in business courses.			Secondary students in other courses.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
1	2	3	4	5	6	7	8	9	10	11	12	13
United States.....	1,690	1,830	3,520	9,170	9,808	19,078	4,712	1,683	6,395	5,021	4,157	9,178
North Atlantic Division	52	38	90	319	237	556	89	44	133	129	173	302
South Atlantic Division	229	230	459	1,647	2,383	4,030	135	69	204	484	443	927
South Central Division	658	748	1,406	2,785	3,267	6,052	497	156	653	797	912	1,709
North Central Division	542	529	1,071	4,346	3,953	8,299	3,901	1,393	5,294	3,505	2,421	5,926
Western Division	209	285	494	73	68	141	90	21	111	106	208	314
North Atlantic Division:												
Maine.....				69	4	73	0	0	0	10	6	16
New Hampshire.....												
Vermont.....												
Massachusetts.....	10	16	26				0	0	0	4	1	5
Rhode Island.....												
Connecticut.....				102	132	234	0	0	0	15	25	40
New York.....	25	0	25				0	0	0			
New Jersey.....												
Pennsylvania.....	17	22	39	148	101	249	89	44	133	106	141	241
South Atlantic Division:												
Delaware.....							3	5	8	30	9	39
Maryland.....				4	0	4	5	1	6	5	0	5
District of Columbia.....										34	0	34
Virginia.....	56	82	138	12	49	61	38	10	48	40	45	85
West Virginia.....	29	32	61	52	63	115	33	13	46	27	41	68
North Carolina.....	60	0	60	503	716	1,219	30	18	48	120	84	204
South Carolina.....	0	0	0	433	508	941	0	0	0	52	145	197
Georgia.....	54	91	145	528	920	1,446	0	0	0	159	119	278
Florida.....	30	25	55	117	127	244	28	22	48	17	0	17
South Central Division:												
Kentucky.....	49	45	94	446	613	1,050	100	21	121	89	65	154
Tennessee.....	261	309	570	1,081	1,031	2,112	196	58	254	286	292	578
Alabama.....				36	102	138				3	2	5
Mississippi.....	279	289	568	818	869	1,687	72	35	107	289	289	578
Louisiana.....												
Texas.....	0	25	25	310	548	858	129	42	171	84	239	323
Arkansas.....	69	80	149	94	104	198	0	0	0	46	25	71
Oklahoma.....												
Indian Territory.....												
North Central Division:												
Ohio.....	161	148	309	95	162	257	421	98	519	1,703	758	2,461
Indiana.....	10	7	17	632	799	1,431	777	379	1,156	385	384	769
Illinois.....	41	45	86	294	289	583	375	158	533	176	64	240
Michigan.....	46	53	99	106	161	267	382	157	539	244	194	438
Wisconsin.....	130	105	235	130	105	235	0	0	0	0	0	0
Minnesota.....	0	0	0				90	4	94	67	19	86
Iowa.....	25	25	50	1,248	1,175	2,423	737	171	908	343	348	691
Missouri.....	81	85	166	228	213	441	278	84	362	124	219	343
North Dakota.....	5	0	5	20	0	20	50	0	50			
South Dakota.....												
Nebraska.....	26	34	60	1,261	641	1,902	553	214	767	321	309	630
Kansas.....	17	27	44	332	408	740	238	128	366	142	126	268
Western Division:												
Montana.....				31	12	43	2	6	8	33	28	61
Wyoming.....	5	8	8				0	0	0	12	11	23
Colorado.....	63	127	190									
New Mexico.....												
Arizona.....												
Utah.....	72	75	147				88	15	103	55	168	223
Nevada.....												
Idaho.....												
Washington.....												
Oregon.....												
California.....	69	80	149	42	56	98	0	0	0	6	1	7

TABLE 6.—*Summary of statistics of private normal schools.*

EQUIPMENT AND INCOME.

State or Territory.	Appropriation from State, county, or city for support.	Received from tuition.	From other sources and unclassified.	Total received for support.	Amount received from productive funds.	Appropriation from State, county, or city for buildings.	Value of buildings and grounds.	Value of other property.
1	2	3	4	5	6	7	8	9
United States.....	\$24,544	\$564,628	\$174,000	\$763,175	\$76,127	\$135,910	\$3,750,250	\$719,938
North Atlantic Division.....	0	22,483	13,000	35,483	12	39,000	175,150	200
South Atlantic Division.....	2,563	23,765	28,396	54,724	350	2,155	401,139	9,000
South Central Division.....	10,981	84,746	43,003	138,730	66,100	64,490	387,210	23,533
North Central Division.....	11,000	411,033	67,685	489,717	9,065	30,275	2,688,780	202,205
Western Division.....	0	22,506	21,925	44,521	0	0	100,000	485,000
North Atlantic Division:								
Maine.....								
New Hampshire.....								
Vermont.....								
Massachusetts.....	0	1,000	5,000	6,000	0	4,000	150	0
Rhode Island.....								
Connecticut.....								
New York.....								
New Jersey.....								
Pennsylvania.....	0	21,483	8,000	29,483	12	35,000	175,000	200
South Atlantic Division:								
Delaware.....	0	1,400	350	1,750	350	0	15,000	
Maryland.....	0	770		770	0	0	66,000	0
District of Columbia.....								
Virginia.....	0	4,151	5,053	9,204	0	0	91,000	0
West Virginia.....	0	3,486	475	3,961		0	79,000	
North Carolina.....	300	2,675		2,975	0	75	14,500	0
South Carolina.....	0	3,109	3,691	6,800	0	0	45,000	2,000
Georgia.....	1,423	3,657	18,677	23,757		80	52,700	7,000
Florida.....	840	4,517	150	5,507	0	2,000	37,939	0
South Central Division:								
Kentucky.....	250	21,844	1,500	23,594	0	3,120	44,750	100
Tennessee.....	2,368	34,533	16,749	53,648	600	60,160	19,500	21,500
Alabama.....								
Mississippi.....	5,365	18,280	15,301	38,946	0	0	172,900	0
Louisiana.....								
Texas.....	2,000	2,104	2,780	7,884	0	1,200	113,500	0
Arkansas.....	0	7,985	6,673	14,658	65,500	0	36,560	1,933
Oklahoma.....								
Indian Territory.....								
North Central Division:								
Ohio.....	9,000	75,802	8,180	92,982	0	1,075	281,500	82,000
Indiana.....	550	119,067	15,360	134,977	300	0	707,000	3,000
Illinois.....	0	16,755	1,745	18,500	0	0	196,000	15,000
Michigan.....	650	25,855	1,233	27,738	0	1,500	131,350	0
Wisconsin.....	0	105	9,283	9,448	6,000		75,000	100,000
Minnesota.....	0	8,600	1,900	10,500		0	73,000	200
Iowa.....	500	74,063	6,126	80,689	1,165	13,500	400,710	16,075
Missouri.....	300	39,167	4,582	44,043	0	14,200	197,200	700
North Dakota.....	0	1,400		1,400				
South Dakota.....	0	0	1,150	1,150	0	0	3,000	0
Nebraska.....	0	34,152	52,278	52,278		0	514,000	32,230
Kansas.....	0	16,012	16,012	16,012	2,200	0	102,000	3,000
Western Division:								
Montana.....	0	2,000	0	2,000		0	14,000	
Wyoming.....	0	165		165	0	0	0	0
Colorado.....	0					0		
New Mexico.....								
Arizona.....								
Utah.....	0	7,177	21,925	29,102	0	0	11,700	235,000
Nevada.....								
Idaho.....								
Washington.....								
Oregon.....								
California.....	0	13,254	0	13,254	0	0	74,300	250,000

TABLE 7.—Percentage of male and female students and percentage of graduates to total number in the normal course.

State or Territory.	In public normal schools.			In private normal schools.		
	Male.	Female.	Graduate.	Male.	Female.	Graduate.
1	2	3	4	5	6	7
United States.....	30.62	69.38	15.70	50.64	49.36	8.28
North Atlantic Division.....	26.79	73.21	17.75	46.21	53.79	4.98
South Atlantic Division.....	32.93	67.07	11.88	42.74	57.26	6.63
South Central Division.....	43.69	56.31	14.32	47.36	52.64	10.99
North Central Division.....	33.28	66.72	13.84	52.78	47.22	8.28
Western Division.....	22.94	77.06	18.04	47.96	52.04	8.24
North Atlantic Division:						
Maine.....	26.58	73.42	16.74	41.96	58.04	0
New Hampshire.....	0	100.00	31.40			
Vermont.....	17.74	82.26	17.38			
Massachusetts.....	4.95	95.05	19.81	16.36	83.64	
Rhode Island.....	100.00	0	14.57			
Connecticut.....	1.64	98.36	29.11	0	100.00	42.86
New York.....	16.71	83.29	17.61	0	100.00	100.00
New Jersey.....	7.82	92.18	28.17			
Pennsylvania.....	40.35	59.65	15.97	49.39	50.61	3.00
South Atlantic Division:						
Delaware.....				0	100.00	85.71
Maryland.....	5.29	94.71	25.67	73.12	26.88	6.45
District of Columbia.....	8.90	91.10	98.70	66.27	33.73	
Virginia.....	36.83	63.17	7.80	39.74	60.26	10.25
West Virginia.....	51.35	48.65	6.19	49.36	50.64	1.79
North Carolina.....	20.88	79.12	7.91	37.08	62.92	4.70
South Carolina.....	100.00	0	54.24	33.73	66.27	12.20
Georgia.....	8.20	91.80	8.82	43.35	56.65	6.33
Florida.....	45.78	54.22	12.05	50.36	49.64	10.07
South Central Division:						
Kentucky.....	39.40	60.60	10.45	52.36	47.64	7.48
Tennessee.....	37.99	62.01	28.85	48.96	51.04	12.18
Alabama.....	48.10	51.90	10.20	53.91	46.09	1.74
Mississippi.....	58.08	41.92	19.16	48.87	51.13	16.15
Louisiana.....	21.83	78.17	14.72			
Texas.....	40.45	59.55	14.24	38.59	61.41	10.65
Arkansas.....	56.89	43.11	12.72	43.51	56.49	3.90
Oklahoma.....	41.38	58.62	0			
Indian Territory.....						
North Central Division:						
Ohio.....	6.19	93.81	39.85	61.51	38.49	4.34
Indiana.....	38.17	61.83	4.08	57.20	42.80	14.91
Illinois.....	33.84	66.16	12.80	52.24	47.76	13.08
Michigan.....	25.34	74.66	18.59	34.95	65.05	4.16
Wisconsin.....	30.09	69.91	13.69	59.65	40.35	22.81
Minnesota.....	23.36	76.64	25.95	69.33	30.67	11.76
Iowa.....	33.33	66.67	16.61	46.37	53.63	4.37
Missouri.....	43.07	56.93	11.61	53.46	46.54	5.60
North Dakota.....	38.84	61.16	1.24	60.00	40.00	
South Dakota.....	32.62	67.38	11.59	39.43	60.57	.61
Nebraska.....	30.14	69.86	16.90	47.64	52.36	7.36
Kansas.....	37.13	62.87	7.18	49.23	50.77	7.58
Western Division:						
Montana.....				46.67	53.33	10.00
Wyoming.....				28.57	71.43	0
Colorado.....	24.24	75.76	9.64	4.11	95.89	19.19
New Mexico.....	57.89	42.11	0			
Arizona.....	30.12	69.88	16.87			
Utah.....				64.97	35.03	1.16
Nevada.....						
Idaho.....						
Washington.....	30.94	69.06	10.07			
Oregon.....	41.85	58.15	16.30			
California.....	11.16	88.84	23.63	8.13	91.87	28.23

TABLE 8.—*Normal students in universities and colleges, and public and private high schools.*

State or Territory.	In universities and colleges.		In public high schools.				In private high schools.				Total.
	Institutions.	Students.	Schools.	Male.	Female.	Total.	Schools.	Male.	Female.	Total.	
1	2	3	4	5	6	7	8	9	10	11	12
United States	173	5,500	153	1,890	3,651	5,041	137	2,000	2,332	4,332	14,873
North Atlantic Division	11	286	67	477	1,707	2,184	30	822	589	911	3,361
South Atlantic Division	25	956	12	178	431	609	25	283	449	732	2,297
South Central Division	45	1,187	25	270	289	559	27	327	259	586	2,332
North Central Division	78	2,707	43	439	1,080	1,529	47	892	835	1,727	5,963
Western Division	14	884	6	26	134	180	8	176	200	376	920
North Atlantic Division:											
Maine	1	6	2	0	23	23	3	53	98	151	180
New Hampshire			3	0	41	41	2	0	21	21	62
Vermont			1	0	5	5					5
Massachusetts	2	22	10	0	172	172	1	0	15	15	209
Rhode Island			2	0	25	25	1	0	2	2	27
Connecticut							1	2	0	2	2
New York	2	100	34	324	730	1,054	9	48	147	195	1,349
New Jersey			3	8	86	94	1	0	2	2	96
Pennsylvania	6	138	12	145	625	770	12	219	304	523	1,431
South Atlantic Division:											
Delaware			1	0	21	21					21
Maryland	1	82	1	2	11	13	2	11	12	23	118
District of Columbia	1	5									5
Virginia	5	25	2	20	124	144	4	55	150	205	374
West Virginia	2	78	1	89	24	63	3	107	98	205	346
North Carolina	6	326	3	46	57	83	6	33	60	93	502
South Carolina	2	96	1	7	7	8	3	29	67	96	200
Georgia	6	339	2	14	7	21	4	21	44	65	425
Florida	2	5	1	56	200	256	3	27	18	45	306
South Central Division:											
Kentucky	6	167	4	107	73	180	5	109	61	170	517
Tennessee	13	473	4	47	26	73	5	32	34	66	612
Alabama	4	95	2	2	20	22	2	10	20	30	147
Mississippi	5	170	7	52	67	119	6	43	54	97	386
Louisiana	3	59	1	0	21	21					80
Texas	7	92	6	39	57	96	3	59	25	84	272
Arkansas	6	122	1	23	25	48	6	74	65	139	309
Oklahoma											
Indian Territory	1	9									9
North Central Division:											
Ohio	15	744	11	120	176	296	11	232	179	411	1,451
Indiana	5	167	2	24	30	54	4	56	78	134	355
Illinois	12	223	6	5	81	86	4	22	23	45	354
Michigan	4	120	3	11	64	75	2	29	104	133	328
Wisconsin	1	151	5	12	25	37	2	24	22	46	234
Minnesota	4	120									120
Iowa	7	260	11	31	407	438	8	290	165	455	1,153
Missouri	10	830	1	74	46	120	8	116	93	209	659
North Dakota	1	12									12
South Dakota	4	140					2	37	53	90	230
Nebraska	7	186					3	5	26	31	217
Kansas	8	254	4	162	261	423	3	81	92	173	850
Western Division:											
Montana											
Wyoming	1	21									21
Colorado			2	20	94	114					114
New Mexico	1	30					1	0	8	8	38
Arizona											
Utah							3	65	58	123	123
Nevada	1	40	1	5	22	27					67
Idaho											
Washington	3	93									93
Oregon	2	53	2	1	15	16	1	0	2	2	71
California	6	147	1	0	3	3	3	111	132	243	393

TABLE 9.—*Distribution of students pursuing teachers' training courses in various institutions.*

State or Territory.	In public normal schools.	In private normal schools.	In universi- ties and colleges	In public high schools.	In private high schools.	Total normal students.
1	2	3	4	5	6	7
United States.....	37,890	27,995	5,500	5,041	4,332	80,767
North Atlantic Division.....	16,424	1,385	266	2,184	911	21,170
South Atlantic Division.....	3,334	2,728	956	609	732	8,359
South Central Division.....	3,374	3,421	1,187	559	580	9,127
North Central Division.....	12,056	19,454	2,707	1,529	1,727	37,473
Western Division.....	2,711	1,007	384	160	376	4,638
North Atlantic Division:						
Maine.....	854	51	6	23	151	1,085
New Hampshire.....	86	.....	.....	41	21	148
Vermont.....	541	.....	.....	5	.....	546
Massachusetts.....	1,232	55	22	172	15	1,496
Rhode Island.....	199	.....	.....	25	2	226
Connecticut.....	426	21	.....	.....	2	449
New York.....	5,339	23	100	1,054	195	6,711
New Jersey.....	639	.....	.....	94	2	735
Pennsylvania.....	7,108	1,235	138	770	523	9,774
South Atlantic Division:						
Delaware.....	.....	7	.....	21	.....	28
Maryland.....	378	93	82	13	23	589
District of Columbia.....	77	169	5	.....	.....	251
Virginia.....	782	283	25	144	205	1,439
West Virginia.....	1,001	391	78	63	205	1,738
North Carolina.....	771	596	326	83	93	1,869
South Carolina.....	59	418	96	8	96	677
Georgia.....	183	632	339	21	65	1,240
Florida.....	83	139	5	256	45	528
South Central Division:						
Kentucky.....	335	762	167	180	170	1,614
Tennessee.....	508	1,158	473	73	66	2,278
Alabama.....	1,108	115	95	22	30	1,370
Mississippi.....	167	706	170	119	97	1,259
Louisiana.....	197	.....	59	21	.....	277
Texas.....	660	526	92	96	84	1,458
Arkansas.....	283	154	122	48	139	746
Oklahoma.....	116	.....	.....	.....	.....	116
Indian Territory.....	.....	.....	9	.....	.....	9
North Central Division:						
Ohio.....	404	3,388	744	296	411	5,243
Indiana.....	1,446	5,056	167	54	134	6,857
Illinois.....	1,117	1,384	223	86	45	2,855
Michigan.....	1,022	1,322	120	75	133	2,672
Wisconsin.....	1,512	57	151	37	46	1,803
Minnesota.....	1,083	238	120	.....	.....	1,441
Iowa.....	891	2,633	260	438	455	4,677
Missouri.....	2,308	2,484	330	120	209	5,451
North Dakota.....	242	50	12	.....	.....	304
South Dakota.....	328	492	140	.....	90	1,050
Nebraska.....	491	1,440	186	.....	31	2,148
Kansas.....	1,212	910	254	423	173	2,972
Western Division:						
Montana.....	.....	30	.....	.....	.....	30
Wyoming.....	.....	7	21	.....	.....	28
Colorado.....	363	73	.....	114	.....	550
New Mexico.....	76	.....	30	.....	8	114
Arizona.....	83	.....	.....	.....	.....	83
Utah.....	.....	688	.....	.....	123	811
Nevada.....	.....	.....	40	27	.....	67
Idaho.....	.....	.....	.....	.....	.....	.....
Washington.....	278	.....	93	.....	.....	371
Oregon.....	540	.....	53	16	2	611
California.....	1,371	209	147	3	243	1,973

TABLE 10.—*Appropriations for public normal schools from States, counties, and cities for five years.*

State or Territory.	1889-90.		1890-91.		1891-92.		1892-93.		1893-94.	
	For support.	For building.	For support.	For building.	For support.	For building.	For support.	For building.	For support.	For building.
1	2	3	4	5	6	7	8	9	10	11
United States.....	\$1,312,419	\$900,533	\$1,285,700	\$409,916	\$1,587,083	\$394,635	\$1,452,914	\$310,826	\$1,096,271	\$1,583,398
North Atlantic Division.....	680,380	678,143	555,485	225,412	702,284	160,050	698,603	485,510	907,010	856,670
Maine.....	83,076	12,130	86,980	40,900	93,260	42,624	92,688	33,074	121,460	49,580
New Hampshire.....	90,190	70,700	86,329	5,900	83,800	11,948	56,844	24,450	119,949	23,350
Massachusetts.....	380,591	167,000	453,006	71,539	527,038	100,913	465,819	168,686	681,824	374,798
Rhode Island.....	78,182	12,500	104,800	68,565	160,700	70,100	172,380	105,100	186,028	279,000
Connecticut.....										
New York.....										
New Jersey.....										
Pennsylvania.....										
North Atlantic Division:										
Maine.....	18,800	9,800	20,000	279	24,650	5,000	28,600	2,000	28,450	12,500
New Hampshire.....	8,000	60,000	7,000		8,000		12,000		12,000	
Vermont.....	9,610	0	7,176		8,676		16,100	1,000	13,089	10,300
Massachusetts.....	90,770	804,100	74,600	1,500	105,011	25,500	121,731	200,000	122,784	276,200
Rhode Island.....	13,973	0	12,674		14,000		14,000		16,000	
Connecticut.....	21,520	25,000	20,000	25,000	34,600		49,000	75,000	79,656	125,000
New York.....	354,061	54,243	353,981	70,633	334,847	44,550	336,645	92,381	397,523	97,783
New Jersey.....	22,546	40,000	24,276	48,000	21,500		28,750	12,000	34,083	10,000
Pennsylvania.....	140,000	145,000	53,528	80,000	150,000	94,000	89,777	103,125	206,095	324,877
South Atlantic Division:										
Delaware.....	10,500	0	10,500		10,500	2,221	10,500	2,224	10,500	
Maryland.....										
District of Columbia.....	45,329	3,800	47,000		58,500		17,000		27,950	5,050
Virginia.....	12,380	6,330	14,630	37,900	13,430	40,400	15,000	27,300	18,718	20,000
West Virginia.....	5,017	0	5,200		6,000		4,300	150	29,235	4,630
North Carolina.....					1,050		5,250	2,000	7,250	
South Carolina.....										
Georgia.....	8,000	0	8,000		3,780		10,218	1,400	23,207	2,500
Florida.....		2,000		3,000					3,600	7,400
South Central Division:										
Kentucky.....	4,320	0	4,320						23,588	2,500
Tennessee.....	10,550	3,000	11,097		16,000	4,000	1,500		1,500	
Alabama.....	25,700	2,250	31,419	3,000	31,000	5,448	27,604	200	23,411	1,300
Mississippi.....	4,520	510	4,520		2,500		2,500		3,960	
Louisiana.....	9,600	0	10,000	2,500	2,500	2,500	12,500	1,250	12,500	1,250
Texas.....	32,500	65,000	20,000		20,000				35,000	3,000
Arkansas.....	3,000	0	4,973		4,300		6,240	6,000	12,500	800
Oklahoma.....							6,000	17,000	7,500	15,000
Indian Territory.....										

TABLE 10.—Appropriations for public normal schools from States, counties, and cities for five years—Continued.

State or Territory.	1898-99.		1899-91.		1891-92.		1892-3.		1893-94.	
	For support.	For building.	For support.	For building.	For support.	For building.	For support.	For building.	For support.	For building.
1	2	3	4	5	6	7	8	9	10	11
North Central Division:										
Ohio.....	\$4,500	0	\$5,000	0	\$8,000	0	\$1,500	0	\$42,700	0
Indiana.....	31,000	\$150,000	30,000	0	41,100	0	40,000	\$40,000	66,104	\$40,000
Illinois.....	42,704	4,000	96,970	\$4,000	100,104	0	58,105	0	62,298	0
Michigan.....	50,000	0	36,360	0	49,908	\$4,000	56,647	20,000	120,911	20,000
Wisconsin.....	57,500	0	86,142	1,139	121,201	22,913	123,417	2,688	82,000	116,000
Minnesota.....	22,053	0	58,500	15,000	68,500	25,000	76,300	66,000	27,875	104,479
Iowa.....	35,000	0	21,500	8,400	25,000	6,000	21,000	0	20,000	18,220
Missouri.....	28,500	0	53,000	10,000	37,250	40,000	23,000	40,000	26,250	3,100
North Dakota.....	20,787	13,000	24,000	20,000	21,500	8,000	21,100	0	21,500	50,000
South Dakota.....	5,175	0	18,850	13,000	18,350	0	20,000	0	8,125	0
Nebraska.....	0	0	22,175	0	23,525	0	0	0	0	0
Kansas.....	0	0	0	0	0	0	0	0	0	0
Western Division:										
Montana.....	0	0	0	0	0	0	0	0	0	0
Wyoming.....	0	0	0	0	0	0	0	0	0	0
Colorado.....	0	0	0	0	35,000	30,000	35,000	20,000	35,000	35,000
New Mexico.....	0	0	0	0	0	0	0	0	3,500	12,000
Arizona.....	6,000	0	7,000	0	6,000	0	0	0	7,200	8,000
Utah.....	0	0	0	0	0	0	0	0	0	0
Nevada.....	0	0	0	0	0	0	0	0	0	0
Idaho.....	0	0	0	0	0	0	0	0	0	0
Washington.....	682	0	19,150	1,500	28,300	0	43,880	0	37,500	135,000
Oregon.....	71,500	12,500	78,250	65,000	90,500	1,100	48,000	10,100	18,528	11,000
California.....	0	0	0	0	0	39,000	45,500	75,000	94,300	78,000

CHAPTER V.

GREAT BRITAIN AND IRELAND.

EDUCATIONAL STATISTICS AND MOVEMENTS 1893.¹

For previous articles on education in Great Britain, see—

Detailed view of the educational system of England. Report 1888-89, Vol. I, pp. 78-111.

Brief view and current statistics. Report 1889-90, Vol. I, pp. 237-248.

Educational system of Scotland. Ibid., pp. 187-236.

Elementary education in London and Paris. Ibid., pp. 263-280.

Brief view of systems of England and Scotland, with current statistics. Report 1890-91, Vol. I, pp. 125-134.

Provision for secondary and for technical instruction in Great Britain. Ibid., pp. 135-150.

Educational system of Ireland. Ibid., pp. 151-164.

Elementary education in Great Britain and Ireland, 1892. Report for 1891-92, Vol. I, pp. 97-104.

Technical instruction in Great Britain. Ibid., pp. 105-137.

Religious instruction under the London school board. Report for 1892-93, pp. 208-216.

TOPICAL OUTLINE.—*Educational statistics, 1893.*—*Comparative view of elementary education, England, 1876 v. 1893; Scotland, 1880 v. 1893.*—*Gradual progress in scholarly ideals indicated by changes in the departmental regulations (annual code); liberal spirit of the code for 1895; practical end of the system of "payment upon results."*—*Improved status of evening schools.*—*Citations: Industrial schools and juvenile crime; Technical education under the London county councils.*—*Tabular view of State-aided colleges.*

The following table presents the chief educational statistics of Great Britain and Ireland, as set forth in recent official reports or other specified sources. As will be observed, the entire province of secondary instruction is omitted from the table. Presumably one outcome of the royal commission appointed (December 8, 1893) to investigate and report upon secondary education will be a systematized view of the existing schools of secondary grade:

¹ Prepared by A. Tolman Smith.

Educational statistics.

Sources of information.	Institutions.	Date of report.	Registered students or pupils.	Professors or teachers.	Expenditure.
GREAT BRITAIN.					
<i>England and Wales.</i>					
Statesman's Year Book, 1894.	Universities:				
	Oxford (23 colleges).....	1893	3,232	90	<i>a</i> £317,832
	Cambridge (19 colleges).....	1893	2,912	108	<i>a</i> 212,055
	Durham (1 college).....	1893	196	13	.....
	Detached colleges (15).....	1893	<i>b</i> 7,309	775	.....
	University colleges for women (4).....	1893	371	.....	.....
Official report, 1893-94.	Bedford College for Women....	1893	146	.....	.....
	Elementary day schools.....	1893	5,126,373	110,285	42,046,420
	Night schools.....	1893	81,068	.....	.....
	Training colleges for elementary teachers.....	.....	4,033	.....	.....
<i>Scotland.</i>					
Statesman's Year Book, 1894.	Universities:				
	Aberdeen (1 college).....	1893	748	43	.....
	Edinburgh (1 college).....	1893	3,138	102	.....
	Glasgow (1 college).....	1893	2,041	94	.....
	St. Andrews (1 college).....	1893	205	27	.....
	Dundee University College.....	1893	250	19	.....
Official report, 1893-94.	Elementary day schools.....	1893	664,838	14,103	6,229,896
	Night schools.....	.....	19,575	.....	.....
	Training colleges for elementary teachers.....	.....	945	.....	.....
<i>Ireland.</i>					
Statesman's Year Book, 1894.	Universities:				
	Dublin University (1).....	.....	1,103	64	.....
	Belfast, Queen's College (1) .....	.....	394	20	.....
	Cork, Queen's College (1) .....	.....	230	25	.....
	Galway, Queen's College (1).....	.....	108	17	.....
Official report, 1893-94.	Elementary day schools.....	1893	<i>c</i> 832,545	<i>d</i> 11,566	<i>e</i> 5,700,222
Official report, 1894.	Training colleges for elementary teachers.....	.....	694	.....	.....
	Under department of science and art:				
	Science schools and classes.....	1892	<i>f</i> 180,410	.....	<i>g</i> 3,167,352
	Art schools and classes.....	1892	<i>f</i> 115,848	.....

a University, exclusive of the colleges. Whittaker's Almanac (1893) gives a total of £200,187 as the combined income of 19 Oxford colleges and £305,061 as that of 17 Cambridge colleges.

b Also 8,253 evening students.

c Average number on rolls. The number of pupils who made at least one attendance was 1,032,287.

d Also 5,454 paid monitors.

e From Statesman's Year Book.

f In addition to pupils in elementary schools receiving grants from the science and art department.

g Parliamentary grant for use in the work of the department, 1893-94.

While it is extremely difficult to obtain a comprehensive view of higher education as maintained in Great Britain, the statistics of elementary education are very complete and uniform for the successive years from 1870.

Up to a very recent date the chief effort of the Government has been to get all children under instruction and to secure appreciable results as an outcome of the public money expended. So long as this standard prevailed the statistics of attendance, enrollment, etc., offered a sufficient index of progress. The following table brings into comparative view the chief items relating to the elementary school system of England and Wales for the years 1876 and 1893 and to the system of Scotland for 1880 and 1893. As regards England and Wales, it should be noted that the earlier of the two dates (1876) was the year of the passage of the first of the laws amending the original "education act" of 1870.

The purpose of the law of 1876 was "to afford additional means for securing the attendance of children at school, especially in districts where there was no school board, or where there were no by-laws in force as to school attendance." The authorities constituted by the new law in districts not under school boards were termed "school attendance committees."

The six years during which the law of 1870 had been in operation had shown clearly the need of greater stringency in respect to school attendance. It will be remembered that the chief purpose of the original law had been to secure the instruction of all children, and thus free England from the stigma of dense and increasing illiteracy. The part which the Government assumed in the work was simply to require adequate school provision in every district. This might be afforded in public elementary schools managed by elected boards and maintained in part by local taxes (rates), or in private (voluntary) schools, of which the various religious denominations were in general the owners and managers. Both classes of schools were to receive grants from the Government upon the same conditions, and their proper fulfillment of the conditions was to be determined by annual examinations conducted by Government inspectors. Since 1876 the system has been further modified by the laws of 1880 and 1891, the former obliging local authorities to make by-laws for compelling parents to send their children to school and the latter providing for the remission of school fees by means of an annual grant to the schools accepting its provisions. The effect of the law of 1891 has been to make elementary education practically free.

The earlier of the two years (1880), employed in the comparative view for Scotland, is not marked by any event of special importance. The law establishing the Scotch system was passed in 1872. The Government assumed substantially the same relation to the work in Scotland as in England. The Scotch law was, however, more comprehensive, as suited the more highly developed and more homogeneous state of popular education in the northern division of the Kingdom. In Scotland a school board was called into existence in every parish, and not only were the parish schools, but also the higher grade burgh schools, placed under the management of the boards, although the burgh schools did not share in the public funds. Subsequently these high-grade schools were permitted to share in the local taxes, so that the system of public education in Scotland was carried to the door of the universities.

As the Scotch law embodied a compulsory clause, its effects upon school attendance were uniform throughout the country. Religious instruction was restrained simply by a conscience clause, which permitted children to be withdrawn from the exercise at the request of their parents, whereas in the English law, not only was there a conscience clause binding upon all the schools, but there was also a clause

prohibiting board schools from giving instruction in any "religious catechism or religious formulary which is distinctive of any particular denomination."

Scotland has been entirely free from the contentions over this subject that have repeatedly convulsed England. The former was the first, also, to secure exemption from school fees, the laws providing for their remission bearing date 1889 and 1890.

It should be added, for the more complete understanding of the comparative statistics, that until 1890 the amount of the grant for each school depended in a measure upon the actual number of children present on the day of the inspector's examination, hence this item has always been reported.

Comparative statistics of elementary schools.

	England and Wales.			Scotland.		
	1876.	1893.	Increase or decrease.	1880.	1893.	Increase or decrease.
I. Estimated population.....	24, 244, 010	29, 731, 100	<i>Per cent.</i> + 22. 6	3, 705, 314	4, 090, 315	<i>Per cent.</i> + 10. 4
II. Number of schools, day and night (institutions), inspected	14, 368	19, 867	+ 38. 0	3, 064	3, 008	— 24. 0
III. Pupils:						
Accommodation for—						
1. Day schools.....	3, 426, 318	5, 762, 617	+ 70. 0	602, 054	737, 797	+ 22. 5
2. Night schools (not connected with day schools)....	14, 810	9, 913	— 33. 0	1, 361	803	— 41. 0
Enrollment, day schools	2, 943, 734	5, 126, 873	+ 74. 0	534, 428	664, 838	+ 24. 4
Present at examinations—						
1. Day schools.....	2, 412, 211	4, 728, 535	+ 96. 0	470, 581	618, 021	+ 31. 0
2. Night schools.....	41, 133	78, 298	+ 90. 0	14, 809	18, 910	+ 27. 0
Average attendance—						
1. Day schools.....	1, 964, 573	4, 100, 000	+ 106. 0	404, 618	542, 851	+ 34. 0
2. Night schools.....	49, 858	81, 068	+ 62. 5	14, 297	19, 575	+ 37. 0
IV. Number of teachers:						
Certificated	23, 053	49, 340	+ 114. 0	5, 330	8, 325	+ 56. 0
Assistant	3, 173	25, 123	+ 691. 0	444	1, 874	+ 322. 0
Pupil.....	32, 231	27, 288	— 15. 0	4, 582	3, 775	— 17. 0
Studying in training colleges	3, 007	4, 033	+ 14. 0	892	858	— . 04
V. Finances:						
Current expenditure....	\$16, 584, 356	\$42, 046, 420	+ 153. 0	\$4, 122, 879	\$6, 229, 886	+ 51. 0
Government grant.....	7, 457, 684	a28, 577, 428	+ 283. 0	2, 157, 808	a 4, 400, 927	+ 104. 0

a Includes the grant in lieu of fees.

As regards the view presented above it will be seen that certain items included in the table have little more than local interest. Even these, however, serve to make the impression more precise and definite. The variation in the number of institutions inspected, for example, may arise from purely accidental causes, as severe weather rendering the schools in certain rural regions, especially of northern Scotland, inaccessible.

The decline in the number of pupil teachers is significant, especially when considered in connection with the increase in the number of certificated and assistant teachers. It shows a growing preference for adult teachers who have passed through the training period. It can

not escape observation that almost in every particular considered there has been marked increase during the periods covered by the comparison. Along with the progress in these measurable quantities there has been also a remarkable development in the ideal of scholastic work. This has always been determined chiefly by the conditions for obtaining the annual parliamentary grant. These conditions are formulated each year by the department in the so-called "code," or body of regulations, which must be sanctioned by Parliament before it can be adopted. The radical changes that have been introduced into these documents from time to time are the indexes of the most important changes that have been effected in the schools.

For the purpose of making these changes intelligible a historical survey of the earlier codes is here presented. It is taken substantially from the introduction to the School Board Chronicle edition of the code of 1891. The survey is carried back to a period antedating the law of 1870. It will be remembered that the Government began making grants to elementary schools as early as 1833. In 1860 the various "minutes" which had been issued for the guidance of the committee of council in charge of this fund were consolidated, and with this digest as a starting point the document known as "the revised code" of 1861 was issued to regulate the future distribution of the grants. Under this code the grant was made to depend chiefly on the average attendance and the results of the individual examination of the scholars in reading, writing, and arithmetic. The effects of this code are thus summarized by our authority:

The inevitable result followed that the teachers were compelled to confine their attention to these elementary subjects, while others, such as history, grammar, geography, mathematics, which in the hands of a capable teacher foster mental activity and create a thirst for knowledge in the scholar, were starved out; and this serious result was not counterbalanced by the fact that the new system of individual examination enabled the inspector "to report with all but absolute certainty upon, at all events, the attainments required; and to apply praise or blame with an amount of firmness and decision which under the former code he was able to do."

Perhaps the effect of the revised code could hardly be better summed up than in the language of Mr. J. G. Fitch, one of Her Majesty's inspectors of schools. In one of his reports he says:

"I can not resist the unwelcome conviction that the new code (1861) is tending to formalize the work of the elementary schools and to render it in some degree lifeless, inelastic, and mechanical. I find too many teachers disposed to narrow their sense of duty to the 'six standards,' or to what they sometimes call, with unconscious sarcasm, the 'paying subjects.' I find an increasing eagerness on the part of teachers to get hold of text-books which are 'specially adapted to the requirements of the revised code,' and which claim, as their chief merit, that they do not go a step beyond those requirements. The practice of explaining and questioning on the meanings of words appears to me on the decline. Spirited oral teaching, mutual interrogation, home lessons, and other devices by which the intellectual life of a school is kept up are far less common than they ought to be, and, as I have reason to believe, than they once were. The teaching of grammar, history, and geography has been much discouraged. It has always been a characteristic of the best schools

that in each of them there was some one subject which, if not a hobby of the master's, was yet one in which his own tastes led him to take particular interest, and which by its special finish and excellence served to prove that his heart was in his school and that he was proud of its success. I regret to say that I see comparatively little of this sort of enthusiasm, and that the adoption of a uniform standard tends in some measure to discourage it."

The late Mr. Matthew Arnold's condemnation of the system under the revised code was, if anything, stronger than that of Mr. Fitch. In his report on education in Germany, France, Italy, and Switzerland, he wrote:

"The fault of the teaching in our popular schools at home is that it is so little formative; it does little to touch their nature for good and to mold them. Again and again I find written in my notes, 'The children human.' They had been brought under teaching of a quality to touch and interest them, and were being formed by it."

* * * * *

Passing to conditions under the law of 1870, the writer continues:

When the education act of 1870 was passed a pledge was given that the amount of the annual grants previously available for the support of elementary schools should be increased. A new code was accordingly framed in 1871 with special reference to the alterations required by that act. The principle of payment by results was still maintained, but a more liberal view was taken, both of the subjects which might be taught and the amounts to be earned. The schedule of specific subjects for which grants were allowed included geography, history, grammar, algebra, geometry, natural philosophy, physical geography, the natural sciences, political economy, and languages.

With slight modifications the code of 1871 remained in force until it was superseded by the code of 1882.

This code, generally known by the name of its author, Mr. Mundella, at that time vice-president of the education department, made the first break in the mechanical system that had grown out of the "revised code." Individual examination in the elementary subjects was still maintained; for these alone a teacher could secure from the grant rates varying from 13s. to 16s. per capita of the children who passed. Liberal grants were offered also for attainments in the higher subjects. The most important feature introduced by the new regulations was the "merit grant." This was to be awarded at rates varying from 1s. to 3s. per capita of average attendance, according to the report of the inspector as to the general conditions of the school—i. e., whether excellent, good, or fair. Inspectors were instructed in making up the report to consider the special difficulties of the teachers, the general intelligence of the district, etc.

The spirit of the new regulations was progressive, but in actual practice they accomplished less than was expected. Even the merit grant proved to be a means of increasing mechanical teaching, and was a special subject of complaint before the commission of 1886 appointed to inquire into the workings of the elementary school laws. An outcome of the recommendations of this commission was the code of 1890. In this, for the first time, there was a radical departure from the system of "payment upon results." It allowed the larger proportion of

the grant to be paid at a fixed ratio upon the basis of average attendance.¹ Moreover, the individual examination of all pupils was no longer demanded; instead, the inspector might examine the class in general or a few pupils, according to his judgment. The law of 1891 providing for the remission of school fees gave rise to some special regulations which were embodied in the code for 1892, but these were not in line with the movement here discussed.

The last measures in the series that have emancipated the schools from a deadening routine are embodied in the regulations just issued for the year 1895. The most important of these has reference to the inspection of schools. Heretofore the inspectors have made a rigid annual examination of every school on the Government list. From this ordeal schools that have reached a certain standard are now excused; in place of the formal examination there may be substituted two annual visits from the inspector, the visits to be made without notice. On these occasions the inspector is to test the instruction and the general condition of the school, and from the notes taken at the time to make up his report of the school. If the report is satisfactory the school will be entitled to the full grant. Thus virtually ends the system of "payment upon results."

The regulations have also reduced the work required in the lower grades, introduced a special schedule for small schools (i. e., those with an average attendance below 60), and have placed cottage gardening as a subject of instruction for boys on the same basis as cookery, laundry, and dairy work for girls. Another provision which shows the tendency toward freer methods of instruction is that allowing the time spent by pupils during school hours in visiting museums, art galleries, etc., to be counted as school attendance. It is stipulated that the visits shall be made under proper guidance.

EVENING SCHOOLS.

The measures adopted for the development of evening schools show the same progressive spirit as those that are gradually transforming the day schools. The present ideal of evening schools is indicated by the new name applied to them, i. e., "Evening continuation schools."

Prior to the regulations of 1893 they were essentially elementary schools, conducted like the day schools upon a rigid system of payment for results. The spirit of the new regulations and the conditions

¹Prior to 1890 the grant comprised four divisions in "schools for older scholars," as follows: (1) A fixed grant of 4s. to 6s. per pupil. (2) A merit grant varying from 1s. to 3s. per pupil, according to the inspector's report. (3) A grant for the three elementary subjects of instruction according to the number of pupils passing a satisfactory examination in each. (4) Various grants in class and specific subjects. The code of 1890 raised No. 1 from 4s. to 6s. to 12½s. to 14s., made No. 2 a definite grant of 1s. to 1½s. for good discipline and organization, and abolished No. 3.

which have made them necessary are thus clearly summarized in the *London Journal of Education* (July 1, 1893):

Mr. Acland's¹ evening school code has not disappointed the hopes of those who expected bold and useful reforms. For the first time we are to have real continuation schools, and yet the new vice-president has had the advantage of the criticisms bestowed on the abortive attempt in the same direction of his predecessor. Individual examination is abolished and inspection without notice substituted; no scholar will henceforth be compelled to take the elementary subjects; adults may be freely admitted, and will earn grants; a variety of practical and recreative subjects have been recognized. The principle of the minute of 1892 is adopted in the apportionment of the variable grants, viz, that they shall depend on the number of hours' instruction given in each subject, and this is extended to the fixed grant, payment by average attendance being superseded.

These are daring changes, but some of them had been long advocated by educationalists. The cautious relaxation in 1890 of the old trammels had produced an immediate increase in the night schools, but the tradition that evening schools were for the three R's was still too strong, and the increase has not been maintained. After our heavy expenditure on day school children, we have allowed them to forget everything from the moment they have reached a standard where intelligence is beginning to be evoked. After a year or two at work, the ordinary London boy can not sum, his writing is atrocious, his grammar worse, his reading merely sufficient for comic cuts.

Let us glance at the figures for London day and night schools. Taking the compulsory period, and assuming the children are in the day schools for eight years, i. e. from 5 to 13, the average number between those ages on the rolls for the last eight years is about 575,000. Last year there were enrolled in the evening schools 30,000 boys and girls between 13 and 21. True, many of the 575,000 have died after leaving school, and there would be slight compensation by immigration, but one would suppose there would be now over 500,000 young people between 13 and 21 in London. The proportion in day continuation schools is, unhappily, very small. Further, of the 30,000 enrolled in the evening schools, an average of 10,000 only attended during the two winter sessions, and only half that number in the summer. The immense majority of our working lads and lassies are not carrying on their education at all during these valuable years.

Mr. Acland wishes to have interesting schools to attract them and thorough teaching when they have come in. The most important of his new provisions is doubtless the abolition of the formal examination and payment by individual passes. For years we have been crying out against the cram to which teachers and pupils resorted before the examination—a cram which was distasteful and useless. We are now to have an inspection of methods of teaching of general knowledge and intelligence. To prevent a slackness of work the inspector will reduce the variable grant from 1s. 6d. to 1s. if both the actual teaching and its method are not thoroughly satisfactory.

The fixed grant ought to be larger when paid, as is proposed, on each complete twelve hours of instruction, as it will enable us to disregard a falling off in numbers, and to continue to teach the earnest pupils whom we have previously sacrificed to the necessity of keeping a high average attendance.

The explanatory memorandum² also suggests that meetings can be lengthened, but after a day's work it is unwise to exact too long a time for instruction. We must not omit to note that, under article 14, a limit of grant is fixed on the basis of average attendance; but we hope the department has calculated that this will not nullify the change and prevent our opening more frequently for special subjects, and allowing pupils to attend only some of these.

¹ Vice-president of the education department.

² Issued by the education department.

For the fixed grant time is recognized, though spent over subjects for which no variable grant can be given—e. g., drawing, manual training, physical exercises, and housewifery. It is evident from the exordium and from the fifth article (which provides that these may be given on other premises if necessary) that it is desired to encourage these.

The following citations from the code and appendixes give in outline the programme for the evening schools, also the expanded programme in English subjects, and in detail the section pertaining to civic instruction. To this is added the explanatory memorandum in which the purposes of the Government in respect to these schools are more fully expressed.

It should be added that corresponding changes have been made in the regulations for evening schools in Scotland.

EVENING CONTINUATION SCHOOL CODE, 1893.

2. Grants may be made for any of the subjects of instruction named in the schedule to this code, and for any other subjects sanctioned by the department, provided that a graduated scheme for teaching any such subject be submitted to and approved by the inspector.

The subjects named in the schedule are the following:

Elementary subjects.—Reading or recitation, or both combined; writing and composition; reading and writing combined; arithmetic.

English subjects.—English, geography, history, the life and duties of the citizen.

Languages.—French, German, Welsh (for scholars in schools in Wales), Latin.

Mathematics.—Euclid, algebra, mensuration.

Science subjects and subjects of practical utility.—Elementary physiography, elementary physics and chemistry, science of common things, chemistry, mechanics, sound, light, and heat, magnetism and electricity, human physiology, botany, agriculture, horticulture, navigation, bookkeeping, shorthand.

Vocal music.—*Subjects for girls and women only.*—Domestic economy, needlework.

Schemes for teaching these subjects are given in the schedule.

Grants are also made for cookery, laundry work, and dairy work as subjects of instruction for girls and women.

3. Instruction may be given in other secular subjects and in religious subjects, but no grant is made in respect of any such instruction. (Elementary education act, 1870, sec. 97, 1.)

4. Instruction in the following subjects is recognized for the purpose of the fixed grant (art. 13 a), but no variable grant (art. 13 b) is paid in respect of them:

Drawing. (Grants for drawing are made by the science and art department.)

Manual or technical instruction.

Suitable physical exercises.

Military drill (for boys and men).

Housewifery (for girls and women).

5. Instruction in the subjects mentioned in article 4, and also instruction in the following subjects mentioned in article 2: Science, vocal music, cookery, laundry work, dairy work, or needlework (for girls and women) may be given elsewhere than on the school premises, provided that special and appropriate provision, approved by the inspector, is made for such instruction, and the times for giving it are entered in the approved time-table. Except as provided by this article, all instruction must be given on the school premises.

6. No meeting of the school is reckoned at which less than one hour's secular instruction has been given.

7. The registers must be marked at the beginning of each lesson. If any scholar registered as attending is withdrawn before the end of the lesson, the entry of attendance should be at once canceled. The registers must show clearly the number of hours' instruction received by each scholar in each subject in which he is instructed. There should be separate registers for each subject. No lesson of less than half an hour in length is recognized for purposes of registration.

8. No scholar may be entered or continue on the register who is under 14 years of age, unless such scholar is deemed by the department to be exempt from the legal obligation to attend school.

9. The "school year" is the year ending on the 30th of April.

10. Any person over 18 years of age approved by the inspector, and not being a pupil teacher engaged in a public elementary school, may be recognized as teacher or assistant teacher. The teachers need not be lay persons.

11. The following conditions must be fulfilled in order that a school may receive an annual grant:

(a) The principal teacher must be certificated or recognized under article 10, and must not be allowed to undertake duties not connected with the school which may occupy any part whatever of the school hours.

(b) The school must have met on not less than thirty evenings in the school year.

If a school has been closed during the year under medical authority or for any unavoidable cause, a corresponding reduction is made from the number of meetings required by this article.

(c) Notice must be given annually at the beginning of the session to the department that the managers desire a grant for the school.

(d) The time-table must be submitted to and approved by the inspector at the beginning of the session. The time-table must show the several subjects in which instruction is given, and the time allotted to each subject. Any alteration in the time-table affecting the days or hours of meeting must be notified to the inspector.

(e) The school must have been visited by the inspector at least once in each school year, unless some cause accepted as satisfactory by the department prevent such visit. The inspector's visits will, as a rule, be made without previous notice being given.

(f) The school must be reported efficient by the inspector. A school will not be reported efficient unless the inspector is satisfied that the order is good, that the teaching is systematic and intelligent, and that the scholars are making genuine progress in the subjects taught.

12. The annual grant becomes due at the end of the school year, and is paid as soon as may be after that date.

13. The annual grant is made up of the several grants, which, with their amounts, are enumerated below:

(a) A fixed grant calculated as follows: All the hours during which each registered scholar has received secular instruction (articles 6 and 7) during the school year shall be added together, and a grant of 1s. shall be paid for every complete twelve such hours. The fixed grant may not be withdrawn unless the whole grant is withdrawn. No fixed grant will be paid unless some other grant under this code is payable.

(b) A variable grant of 1s. 6d. or 1s. for every complete twelve hours' instruction received by any registered scholar during the school year in any subject allowed by article 2, in which not less than fifteen hours' instruction has been given during the same period. The department shall decide which, if either, of these sums shall be paid after considering the report of the inspector's visit or visits. The grant will be separately assessed for each subject. (1) No variable grant shall be paid for any scholar on account of less than two or more than five subjects. (2) No variable grant shall be paid for any scholar on account of any subject in which he has been

previously examined by the science and art department. (3) No variable grant shall be paid for any scholar on account of more than two science subjects. (4) If a scholar is to be presented for examination in two science subjects by the science and art department in the May following the close of the school year, no variable grant shall be paid for him on account of any science subject, and if he is to be so presented in one science subject, no variable grant shall be paid for him on account of more than one science subject.

- (c) Where the inspector reports that special and appropriate provision is made for the practical teaching of cookery by a teacher holding a certificate from some training school of cookery recognized by the department, a grant of 2s. or 4s. is made on account of each girl or woman who has attended not less than twenty or forty hours during the school year (of which not more than four hours may be in any one week) at a cookery class of not more than 24 scholars, and has spent not less than ten or twenty hours in cooking with her own hands.

The time for cookery must be entered in the time-table, and should not be less than a continuous hour or hour and a half at any meeting; provided that for the purposes of article 13 (b) (1) cookery shall be considered as a subject, and that no grant shall be paid for a scholar on account of cookery only. (1) Where the inspector reports that there is no convenient means of obtaining a certificate, the certificate above mentioned shall not be required, but the competency of the teacher must be proved to the satisfaction of the department. (2) For the purpose of demonstration, not more than three classes of 18 scholars may be present, provided the inspector reports that the number present may be conveniently accommodated; but for the ten or twenty hours required for cooking with their own hands (during which time no demonstration lesson can be given) not more than 18 scholars shall be taught at the same time by one teacher.

- (d) Where the inspector reports that special and appropriate provision has been made for the practical teaching of laundry work by a teacher recognized by the department as qualified to teach that subject, a grant of 2s. is made on account of any girl or woman who had attended not less than twenty hours during the school year at a laundry class of not more than 14 scholars.

The time for laundry work must be entered in the time-table; provided that for the purposes of article 13 (b) (1) laundry work shall be considered as a subject, and that no grant shall be paid for a scholar on account of laundry work only.

- (e) Where the inspector reports that special and appropriate provision has been made for the practical teaching of dairy work by a teacher holding a certificate recognized by the department, or otherwise recognized by the department as competent to teach dairy work, a grant of 4s. is made on account of any girl or woman who has attended for not less than 20 lessons, of at least two hours each, a class of not more than 14 scholars. The time for dairy work must be entered in the time-table, and should be not less than two continuous hours at any meeting; provided that for the purposes of article 13 (b) (1) dairy work shall be considered as a subject, and that no grant shall be paid for a scholar on account of dairy work only.

14. For the purposes of section 19 of the elementary education act, 1876 (see Appendix, art. 107), the average attendance shall be found by dividing the total number of hours of instruction (art. 7) received by registered scholars during the school year by the total number of hours during which the school has been open during the same period.

15. The department, as occasion requires, may cancel or modify articles of the code, or may establish new articles, but may not take any action thereon until the same shall have lain on the table of both houses for at least one calendar month.

16. The code shall be printed each year, in such a form as to show separately all articles canceled, modified, or established since the last edition, and shall be laid on the table of both houses within one calendar month from the meeting of Parliament.

17. The schedule annexed to the code has the same effect as the articles of the code and is subject to the provisions of articles 15 and 16.

KIMBERLEY,

Lord President of the Council.

ARTHUR H. D. ACLAND,

Vice-President of the Committee of Council on Education.

G. W. KEKEWICH,

Secretary.

EDUCATION DEPARTMENT, May 18, 1893.

ENGLISH SUBJECTS.

(1) *English*.—Parsing and analysis of sentences; paraphrasing of simple poetical extracts; history of the English language.

(2) *Geography*.—General geography of the British Isles, their chief industries, and means of communication by land and water.

General geography of Canada and the United States, or of Europe or Australasia or British India, with special reference in each case to their industries and to their commercial relations to Great Britain.

Colonization and the conditions of successful industry in the British Possessions generally.

(3) *History*.—(a) Particular periods or subjects, e. g.: The reign of Queen Victoria; history of the British colonies; the Stuart period, with especial reference to the constitution and functions of Parliament; the Expansion of England in the eighteenth century. (b) Biographies of leading persons and the chief events in a selected portion of history, e. g., 800 to 1215 A. D., or 1688 to 1760 A. D.

In Welsh schools special attention may be given to geography, history, and industries of Wales.

(4) *The life and duties of the citizen*. (See Set B.)

SET B. (DETAILED SCHEMES.)

1.—LIFE AND DUTIES OF THE CITIZEN.

It is our business carefully to cultivate in our minds, to rear to the most perfect vigor and maturity, every sort of generous and honest feeling that belongs to our nature. To bring the dispositions that are lovely in private life into the service and conduct of the Commonwealth—so to be patriots as not to forget we are gentlemen. * * * Public life is a situation of power and energy: he trespasses against his duty who sleeps upon his watch, as well as he that goes over to the enemy. (Burke: *Thoughts on the Cause of the Present Discontents*.)

[This syllabus touches only on certain limited aspects of the public life of the citizen. Various important considerations are therefore omitted which teachers will no doubt discuss in dealing with the subject.

The subject as here set out will be found difficult to teach, except to those older scholars who are in the habit of reading and thinking intelligently about public affairs. For the instruction of such students the general outline here given may be of service to teachers, though it covers more ground than can be dealt with even in two or three courses. The teacher will select that part which is most appropriate to the circumstances and needs of the school and the locality. For younger scholars a much simpler form of syllabus should be prepared from which the more technical treatment of the machinery of local and central government should be omitted.

The object of the teacher should be to proceed from the known and familiar, such as the policeman, the rate collector, the board of guardians, and the town council, to the history of and reasons for our local and national institutions and our responsibilities in connection with them.

Good illustrations and diagrams and pictures will be of great service in teaching this subject.]

INTRODUCTION.

What the citizen should aim at in the interest of his country.

Public duties accompany all forms of work in life, whatever the occupation or profession.

Serving personal interest alone is not enough.

The individual benefits from a well-ordered community. The community ought to benefit in its turn from the efforts of the individual. "All for each" should be required by "each for all."

The reasons for attachment to our country and for a sense of duty toward our fellow-citizens are similar to those for love of home and family. Loyalty to one's own village or town should lead to a larger patriotism. Those who are growing up into citizenship should realize their debt to the men and women who have served the nation generously and wisely in the past, and their own duty to their country in the present. Self-interest and class interest should be subordinate to general and national interests.

The nation and the state.—What they mean. Difference between representative government and despotic government. Responsibilities involved in representative government.

I.—REPRESENTATIVE GOVERNMENT.

What representative institutions mean. The cooperation of the people in the work of government. The power of the majority; its limits. The force of public opinion. Need of public spirit and of intelligence for good government.

The machinery of government is partly local, partly central.

A. LOCAL GOVERNMENT.

Local government districts, small and large.—Institutions of local self government.

1. *The village and the parish.*—The vestry. The choosing of overseers, guardians, etc.
2. *School districts.*—School boards, school managers, and school attendance committees.
3. *The poor law union.*—Boards of guardians.
4. *Local board districts, boroughs, and counties.*—Local boards, town councils, and county councils. The choosing of mayors, aldermen, and councilors.

Composition and methods of election of bodies above mentioned.

Work and powers of these bodies as regards—

1. *Rating and expenditure.*—The rate collector. Purposes for which money is spent. Difference between rating and taxation.
2. *Health.*—Sanitary condition of houses; drainage, baths, and washhouses; gas; water; purification of rivers. Hospitals; sick nursing. Sanitary and medical officers.
3. *Education.*—Day and evening continuation schools. Provision of schools and attendance at school. School attendance officers. Free libraries. Picture galleries and museums. Technical education.
4. *The destitute poor.*—The relieving officer. Outdoor and indoor relief. The workhouse.
5. *Roads, streets, buildings, and land.*—Paving and lighting of streets. Public parks and recreation grounds. Town halls and municipal buildings; what goes on inside them. Purchase of land for improvements and public purposes. Allotments and small holdings.

6. *Police and justice.*—The policeman, his powers and duties. The magistrate, how appointed; his powers and duties. Petty sessions and quarter sessions. Public houses and licensing.

The local representative bodies have in most cases certain responsibilities to or dealings with the central government. (See B, (iii) Executive government.)

B. CENTRAL GOVERNMENT.

- (i) *The Crown and the two Houses of Parliament.*

(1) *The Crown.*—Its constitutional position and powers.

(2) *House of Lords.*—(a) Composition, (b) powers.

(3) *House of Commons.*—(a) Composition. How members of Parliament are elected. The franchise and the ballot. (b) Powers.

(4) *Working of the Parliamentary system.*—Taxation, legislation, administration. Party government. Ministry and cabinet; their joint responsibility. Ministry and opposition. Majorities and minorities; their powers. How a bill becomes an act of Parliament.

- (ii) *The judicial system.*

Justice.—The lord chancellor, judges, magistrates, coroners; how appointed.

Courts of law.—Civil and criminal. Petty sessions, quarter sessions, county courts, assizes, high court, court of appeal, House of Lords. Privy council. Juries and their relation to courts of law.

- (iii) *Executive government.*—The duty of carrying into effect many of the laws, and the decisions of Parliament from time to time, is intrusted to various public departments, the most important of which are presided over by responsible ministers of the Crown.

The work and powers of the executive government.—(1) In connection with the work of representative local bodies in matters of education, health, and the destitute poor. (Education department and local government board.) (2) In matters of trade, commerce, agriculture, post-office, telegraphs, and savings banks. (Board of trade, board of agriculture, post-office.) (3) In matters of labor. (See under III. Home office, board of trade.) (4) In matters of justice. Prisons and police. (Home office.) (5) In connection with Scotland and Ireland. (Scotch office and Irish office.) (6) In connection with the colonies, India, and foreign countries. (See II. The Empire.) (Colonial office, India office, foreign office.) (7) In connection with the army and navy. (War office, admiralty.) The army; the army reserve, militia, yeomanry, and volunteers. The navy; naval reserve, coast guards. Duties and responsibilities of the soldiers and sailors of the country by land and sea. The evils of war. Efforts that have been made to avert it by arbitration. (8) In matters of taxation and finance. (The treasury.) The country's yearly bill. What we pay for. How the money is got. Direct and indirect taxation.

C. DUTIES OF CITIZENS IN RELATION TO LOCAL AND CENTRAL GOVERNMENT.

1. *Right and duty of voting.*—Different kinds of votes. Need of honesty in giving a vote. The vote a "trust" as well as a "right." Each vote has a special end and aim, which ought to be considered. The gain and loss of party spirit.
2. *Rates and taxes*, and what we get in return for them. Reasons for willingness to contribute to common purposes in well-administered countries. Illustrations of gain to the community from improved conditions of life and health as a result of rates and taxes well spent.
3. *Public health.*—Attention to sanitary matters at home, cleanliness, and ventilation. Isolation and disinfection in illness; temperance and temperate habits; duty to neighbors as well as home and family. Healthiness of a district; its value to the community. Public parks, gardens, and open spaces; duty of making them beautiful and taking good care of them.

4. *Education.*—Duty of parents: To enforce regularity of attendance, to cooperate with the teacher in regard to conduct of scholars, to home lessons, and the care and use of books. Duty of scholars: To make full use of the advantages of the school, and thus fit themselves to become capable and useful citizens. Influence of school on character as well as on intelligence. Waste of force and money through leaving school too early. Technical education, its value for the worker. Higher education and the universities. School and college only the beginning of the citizen's education.
5. *Provision for the poor.*—Care of poor children and the sick and aged poor. Consideration of the causes of pauperism, and how to diminish it. Importance of self-dependence and habits of providence.
6. *Need of order and respect for law.*—The citizen's home and protection. Respect for the persons, opinions, property, and reputation of others. Discouragement of fraud in all relations of life and business. Support of the law and encouragement by example of peaceable behavior by all citizens. Examples of what the law demands: (a) Registration of births, deaths, and marriages. (b) Notification of infectious diseases. (c) Prevention of cruelty to children and to animals.
7. *Public spirit and public opinion.*—Force of public opinion; need of honesty and intelligence. Freedom of speech and writing. Uses of public meetings; how they should be conducted. Watchfulness over public bodies. Services of the public press in these matters. Active cooperation of the whole body of the people essential to good government and freedom. Willingness of capable persons to serve in a representative capacity on public bodies of great importance.

II.—THE EMPIRE.

Great Britain and Ireland. "Greater Britain."—The colonies.

Variety of races in colonies and dependencies. Self-governing colonies. Crown colonies. Protectorates. India and its government.

Imperial coinage and imperial postage.

Appointment of governors-general and governors.

Obligation to cultivate knowledge about our brethren "across the sea." Native races within the Empire and our duties to them.

Extension of friendly feeling and of courtesy and fair dealing toward foreign nations. Appointment of ambassadors, envoys, and consuls.

III.—INDUSTRIAL AND SOCIAL LIFE AND DUTIES.

Selection for boys or girls of work in life. Loss to the nation when they are set to uncongenial labor. Corresponding gain of "tools to the men who can use them."

What constitutes national wealth. Every capable and industrious and self-respecting citizen should add to the wealth of the community. Relation of skill and knowledge (a) to personal well-being and happiness; (b) to industrial success; (c) to power of public usefulness.

The great industries of the country, their growth and development.

Changes caused by the use of machinery.

Associations of workers.—(1) Trade unions, their history and work. Labor disputes and strikes. Arbitration and conciliation. (2) Cooperative societies; their work in distribution and production. (3) Friendly societies. Training in habits of industry; thrift and self-help. Value of the work of voluntary associations in the education of the adult citizen.

The state and labor.—Factory acts; mines acts; women's and children's labor. Dangerous employments. Health and safety of the worker. Information as to condition of workers. Labor department of board of trade. The government and municipalities as employers of labor, dockyards, arsenals, and public works.

The importance to the nation of effective, honest, and intelligent management of all forms of business and industry. The disasters which result from mismanagement or fraud.

The duty of the community to sympathize with every reasonable effort of the workers to improve their condition and develop their intelligence. That which injures their efficiency or lessens their hopefulness leads to national loss and to the maintenance or increase of poverty and ignorance. A healthy and skillful body of workers, upright in character and self-reliant, is a source of strength to the country.

Faithful discharge of homelier duties of life is the best preparation for their discharge in city and nation. Civic duty begins in the life of the family, expands with occupation in trade, business, and profession.

In earning their livelihood men and women also serve their fellow-citizens and their country. Membership of self-governing societies is among the best means of civic education.

As intelligence, honor, and virtue are essential to the welfare of the family, so is patriotism necessary to national and social life. We have to recognize that our public responsibilities are duties as much as personal and family obligations. We have no right to expect just legislation or impartial administration unless we perform with intelligence those public duties which devolve upon all. If we suffer injustice in connection with public affairs, we have little right to complain unless we have done our own duty.

EXPLANATORY MEMORANDUM.

I. The objects contemplated in the evening continuation school code are:

- (a) To give freedom to managers in the organization of their schools.
- (b) To offer to managers and teachers a wide choice of subjects adapted to the various needs of scholars and districts.
- (c) To suggest, both concisely and in detail, courses of instruction in these subjects.
- (d) To enable managers to combine instruction in subjects for which grants are paid by the State with instruction in other subjects for which no such grants are paid, but which it may be for special reasons desirable to include in the curriculum.

II. The following are the principal changes now introduced:

- (a) The attendances of persons over 21 years of age will henceforth be recognized.
- (b) No scholar will henceforth be compelled to take the elementary subjects.
- (c) Further precautions are taken to avoid duplication of grants by the education department and the science and art department.
- (d) Grants will be paid as in day schools for the instruction of the school as a whole instead of, as formerly, for the attainments of individual scholars.
- (e) The fixed grant is no longer paid on the average attendance, but on the aggregate number of hours' instruction received by the scholars. This will give a direct encouragement to the prolongation of evening school sessions and the lengthening of meetings.
- (f) Instead of grants for individual passes, grants will now be paid for time devoted to each subject, the amount of such grant being dependent on the value of the instruction given.
- (g) Examination by the inspector on a fixed day is abolished and visits of inspection without notice are substituted.

III. The new regulations are designed generally to meet the requirements of scholars who are no longer subject to the law of compulsory attendance at school and who

desire to prolong their education, either in the ordinary school subjects or in some special subjects in order to fit themselves for some industrial career. Evening continuation schools will have to meet various needs, as, for instance:

- (a) The case of the smaller schools, which are intended mainly to supply defects in early elementary instruction and to continue such instruction with a view to the ordinary pursuits of daily life.
- (b) The case of schools, especially in the more populous districts, in which the general education of the scholar is prolonged and combined with some form of useful and interesting employment.
- (c) The case where the principal part of the work will be preparatory to the special studies directed by the science and art department or to lectures established by the county councils, university extension lectures, or other forms of secondary or higher education.

IV. The duties of Her Majesty's inspector in giving effect to the provisions of the evening continuation school code will be:

- (a) To visit without notice, on one occasion at least, and if possible on more than one, at some time at which the school is shown by the time-table to be at work, every school for which a grant is claimed, and to devote if possible to the inspection the whole time of one meeting of such school.
- (b) To confer with the managers, whose presence, if it can be obtained, is very desirable, and with the teachers; to ascertain that due arrangements have been made for securing accurate registration of attendance; to examine the registers and time-tables, and to report on the qualifications of the teachers and the course of instruction.
- (c) To hear lessons and observe the manner in which the classes are conducted; to question the scholars on the work which has been done in at least two of the subjects taught in the school, and to report generally on the instruction.
- (d) To satisfy himself that the schoolrooms are suitable for their purpose, bearing in mind the importance of an adequate supply of artificial light.
- (e) To recommend what variable grant (if any) should be paid, having due regard to the opinion he has formed upon the general character of the teaching and the particular methods employed. The higher of the two grants will not be paid for any subject unless the inspector is able to report that both the actual teaching of the subjects and the methods employed in such teaching are thoroughly satisfactory.

V. My Lords will be interested to learn from the reports of Her Majesty's inspectors the results of any successful experiments by which evening continuation schools have been rendered more attractive, e. g.—by means of lantern illustrations, music, manual work, discussion of some book which has been read by the class; field, naturalist, or sketching clubs; gymnastics, or other employments of a more or less recreative character. For many of these purposes grants of public money can not be given, but, provided that the managers take care that at least one hour at each meeting is devoted to the teaching of the subjects mentioned in article 2 of the code, and that the instruction is systematic and thorough, every arrangement for making the school attractive should be carefully considered. For instance, besides the introduction of some of the recreative subjects mentioned above, encouragement might be given to capable lecturers to deliver from time to time short lectures, well illustrated, in connection with some of the subjects in the school time-table.

VI. Unless special efforts are made to encourage those who are leaving the day school to continue their education at evening schools, the chances of success in the evening schools will be much diminished. Care should therefore be taken to give full information to such scholars of the times and places at which evening continuation schools are held. With this object the managers of those schools should put themselves in communication with the managers of the neighboring day schools.

VII. My Lords will be glad to know from time to time of any special difficulties which appear to be connected with the work of evening continuation schools with a view to their being lessened or removed. They attach a very high importance to the work which may be done under this code, as effective continuation schools supply one of the most important means for turning to better account than at present the money and time now spent in the day schools.

In connection with the survey of the elementary schools of Great Britain, it is not out of place to consider the agencies created by the Government for the restraint and correction of vicious and lawless youth. The following citation from a recent article by Mr. A. A. W. Drew, who has been officially engaged in the work, will put the reader in possession of its salient features. To this statement is added a short extract from a recent article touching the new lines of educational work which have been assumed by the London County council in its effort to rescue the slum population:

INDUSTRIAL SCHOOLS AND JUVENILE CRIME.

About the year 1866—i. e., four years before the introduction of the school board system which gave new life to the work of public elementary education in England—a great wave of doubt had passed over the minds of our senators, which made them question whether the old plan of committing juvenile offenders to prisons or to reformatories was either a wise or a judicious one; and the result was the introduction into Parliament of a bill to deal with that question, and the passing of an act, known as the industrial schools act, which made a great change in our method of dealing with youthful criminals.

In 1869, the year before the first school board act was passed, as many as 10,314 juvenile criminals, under the age of 16 years, were committed to prisons in England; while the last completed returns—viz, those for 1891—show that in that year only 3,855 were so committed. Also, in 1869 there were sent on to reformatories 1,331 children, of whom 1,075 were boys and 256 were girls; while in the year 1891 there were only 1,020 children committed to reformatories, of whom 885 were boys and 135 were girls. What had become of the balance of juvenile criminals from 1869 to 1891, so that the number sent to prisons or reformatories had decreased from 10,314 in the former year to 3,855 in the latter? Is it true that education, by a curative process, had largely diminished the number of such children, notwithstanding the enormous increase in the population of the country?

Of late years there has sprung up, under the fostering influence of the industrial schools act of 1866, a large number of schools, differing absolutely from prisons and very widely from reformatories, known as “certified industrial schools.” In 1866 there were in this country, not including Scotland, only 57 such schools, containing a total of 2,566 children, of whom 1,893 were boys and 673 girls. In 1861 there were in Great Britain 153 certified industrial schools, containing 23,688 children, of whom 19,292 were boys and 4,396 girls. These numbers include those detained in truant schools under the elementary education act, and also in certified day industrial schools; so that it will be seen that although the number of children committed to prisons and reformatories has decreased, the numbers in industrial schools has increased from 2,566 in the year 1866 to 23,688 in the year 1891.

From this it will be seen that public elementary education has not yet reformed our juvenile criminals, only that the policy of the country has transferred them from prisons or reformatories to industrial schools. Even this is a great step to have taken, but the same policy requires to be vigorously followed up by the removal of those blots which still remain as hindrances to the reformation of youthful offenders. And this our Parliament alone can bring about by legislation.

The fact of the matter is that, short of Utopia, there must of necessity exist for corrective, industrial, and educational purposes a graduated series of establishments suitable for the many varying cases which come under treatment.

After nearly thirty years of close acquaintance with the juvenile population of this great metropolis, I have no hesitation in saying that truancy is to be credited with nearly the whole of our juvenile criminality, and that if much more energetic steps were taken to deal with our young truants, the list of convictions for criminal offenses would be very largely reduced, and in my opinion it is well worth while seriously to make the attempt.

The percentage of truants cured by a single short visit to a well-managed truant school has already been given as 80 per cent, and, to take the latest return of the home office, the percentage of industrial school children in 1891 who have passed through these schools, and are now reported as doing well, is, for boys, 85.5 per cent, and for girls, 84 per cent; thus incidentally showing, what actually is the fact, that the reformation of a bad boy is just a shade easier than that of a bad girl.

The industrial schools amendment act of 1880 is a most useful one, especially as regards girls; and I marvel to find that so very little use is made of it. I can only say that our committee never neglects to deal promptly with any case which comes before it under this act, which adds to section 14 this further condition under which a child may be sent to an industrial school, "that is lodging, living, or residing with common or reputed prostitutes, or in a house resided in or frequented by prostitutes for the purpose of prostitution, or that frequents the company of prostitutes."

Yet another very useful act is that of 1891. It is entitled "An act to assist the managers of reformatory and industrial schools in advantageously launching into useful careers the children under their charge," and its provisions authorize the managers of all such schools, with the child's own consent, and, if necessary, without the parents' consent, "to apprentice him to or dispose of him in any trade, calling, or service, or by emigration, notwithstanding that his period of detention has not expired, and such apprenticing or disposition shall be as valid as if the managers were his parents." But in the case of emigration the consent of the home secretary must also be obtained. (Andrew A. W. Drew, *Contemporary Review*, May, 1893, 732-742.)

TECHNICAL EDUCATION UNDER THE LONDON COUNTY COUNCIL.

If it be asked what new thing the present council has done, apart from extending the first council's work, I think we may with some confidence refer to the starting of its department of technical education. The circumstances of London differ so much from those of other cities and counties, the difficulties and complications of its educational problems are so great, the chaos of uncoordinated authorities is so bewildering, that the first council may well be excused for not immediately adding technical education to all its other duties. But the second council grappled with the problem in its very first summer. Having been, from the outset, the chairman of the special committee and then the technical education board, to which the council has delegated its educational functions, I am disqualified from expressing any opinion as to the success of this new departure, but I think it will be admitted that we have made good use of our time. The technical education board, which carries on this part of the council's work, has already established a comprehensive "scholarship ladder," from the board school right up to the highest technical college, the best art schools, and the university. It has done much, by its liberal grants and skilled inspection, to develop and improve the various "polytechnics" now growing all over the metropolis. Under the expert guidance of Dr. Garnett it has worked a beneficent revolution in evening science and technology classes, and made more practical the instruction in these subjects given in the public secondary schools; whilst the London schools of art are, under its fostering care, springing into new life. By the appointment, as its art advisers, of such expert craftsmen as Mr. George Frampton, A. R. A., and Mr. William Lethaby, a distinguished sculptor

and a no less distinguished architect, the board has shown how keenly it is alive to the need for a thorough reorganization of the "arts and crafts" side, and we need not now despair of London one day possessing a municipal art school to rival that of Birmingham. Nor have the women and girls been forgotten. Besides sharing in all the preceding advantages, they enjoy a special department of their own. The board has set up three "schools of domestic economy" (shortly to be increased to five), which intercept the maidens of thirteen who would otherwise be leaving school to "take a little place." It has started at Battersea a domestic economy training school which is already turning out skilled teachers accustomed to the house-keeping of the London poor; and, by a permanent staff of qualified instructors in cookery, dressmaking, laundry work, and hygiene, it has given thousands of lessons in these subjects to groups of workingwomen in all parts of London, who are too old or too poor, too hard worked or too apathetic, to take advantage of any existing institutions. (Sidney Webb, *Contemporary Review*, January, 1895, pp. 141-142.)

UNIVERSITY COLLEGES AIDED BY THE GOVERNMENT.

The report of the Commissioner for 1891-92 gave an account of recent provision for technical instruction developed in the chief industrial centers of Great Britain. Along with this movement, and in many cases intimately connected with it, is the establishment of university colleges—that is, colleges which maintain the courses of instruction required for degree examinations (usually of London University) or which are affiliated with Durham or Victoria universities. In 1889, Parliament allowed a grant of £15,000 (\$75,000) to these colleges, a policy which has been renewed each succeeding year. In consideration of this allowance the colleges participating in the £15,000, and also the three colleges in Wales which receive from the treasury an annual grant of £4,000 each, were invited in 1893 to furnish a report to the education department. This was to comprise in each case a historical outline, a statement of the constitution and purposes of the college, and its present status. The statements submitted have been published as a report of the Department, and from this source the following tabulated particulars are derived. Of the colleges included it may be said that, while they present great divergence in respect to origin, government, endowment, and facilities, they have certain common characteristics. They have all arisen in response to the need of a wider diffusion of higher education than is possible through the agency of Oxford and Cambridge alone, coupled with the equally urgent demand for special training in the applications of science and the methods of scientific research.

As will be seen by reference to the table, women share freely in the provisions of these colleges. With regard to the showing in the table as to scholarships, it should be said that both items given, i. e., the number and the annual value of the scholarships, are approximates only. From the nature of the data presented in the original report exact statements are impossible. In several instances free scholarships are mentioned, of which neither the number nor the money equivalent is specified; in others, one or the other item is given, but not both.

Again, a scholarship is sometimes available in any one of two or more colleges, according to the choice of the successful competitor, so that there may be even duplication of funds in the tabulation, but this could occur in a few instances only. The showing, with all imperfections, is important, as it gives a fairly clear idea of the provision for higher education available for young men and women of marked ability, but who could not otherwise afford the expense of advanced instruction. In England, where free high schools are almost unknown and free universities entirely so, the provision of endowed or of free scholarships is a matter of great public moment. It should be added that while in the majority of instances the scholarships secure tuition in the colleges to which they pertain, a few are intended to secure university advantages for the holders.

University colleges.	Date of foundation or opening.	Staff.			Students.				Current expenditure, 1892 or 1893.	Scholarships, prizes, and other funds in aid of students.		Faculties or departments.	
		Professors.	Lecturers and demonstrators, etc.	Total.	Day classes.		Evening classes.			A. p. proximate annual value.	A. p. proximate annual value.		
					Men.	Women.	Men.	Women.					
Mason College (Birmingham)	1875	13	2	23	101	218	2409	174	117	2291	17	\$5,000	Arts and science; medical.
University College (Bristol)	1876	16	54	70	223	179	412	154	130	293	21	1,800	Do.
Yorkshire College (Leeds)	1874	17	33	50	334	46	400	.....	.....	440	23	13,000	Do.
University College (Liverpool)	1881	20	19	39	244	69	313	500	.....	650	24	4,000	Arts and science; medical; law.
King's College (London)	1829	62	43	105	1,206	1,975	3,181	.....	1,244	1,244	42	9,000	Arts and science; medical; theology.
University College (London) <i>c</i>	1869	49	11	60	.....	.....	1,122	.....	.....	.....	51	12,000	Arts and laws and science; medicine.
Owens College (Manchester)	1870	26	68	94	894	93	987	320	.....	320	86	20,000	Arts and science; law; medicine.
Durham Science College (Newcastle-on-Tyne)	1871	12	25	37	254	228	482	1,291	187	1,478	15	2,000	Arts and science; technical; agricultural; normal.
University College (Nottingham)	1881	7	25	32	.....	.....	431	.....	.....	1,329	(d)	(d)	Arts and science.
Perth College (Sheffield)	1879	7	7	14	110	48	158	84	19	103	20	1,900	Arts and science; technical; medical.
University College (Aberystwith)	1872	9	14	23	132	85	217	.....	.....	.....	70	4,800	Arts and science; agricultural; normal.
University College of North Wales (Bangor)	1884	9	10	19	105	44	149	.....	.....	.....	29	3,800	Arts and science; technical.
University College of South Wales and Monmouthshire	1884	13	45	58	196	121	317	.....	.....	.....	161	27,500	Arts; science; applied science and technology; domestic science; medical; normal.
University College (Dundee)	1883	25	1	26	164	39	203	91	21	112	10	7800	Arts and science; medical.

^a Arts and science department only.

^b Average.

^c Originally incorporated as the University of London, 1828.

^d 19 scholarships, varying from £10 to £25.

^e Other demonstrators and lecturers, number not given.

^f Also proceeds of £1,850.

CHAPTER VI.

EDUCATION IN FRANCE, 1891-92.¹

France, Republic.—Area, 204,092 square miles. Population (actual) April 12, 1891, 38,095,156; domiciled or legal, 38,343,193.

Civil divisions.—For purposes of civil government France is divided into 86 departments (90 if Algiers be included), each having its local legislative assembly which is formed by election. The departments are subdivided into arrondissements and these into cantons. The smallest civil divisions comprised within the cantons are communes.

For previous articles see—

The educational system of France. Report, 1888-89, Vol. I, pp. 112-149.

Report of the educational congresses and exhibition held in Paris, 1889. *Ibid.*, pp. 41-186.

Educational system and operations for 1888-89. *Ibid.*, pp. 249-261.

Elementary education in London and Paris. *Ibid.*, pp. 263-280.

Education in France: Statistics, 1890-91; progress of primary schools since Guizot's law, 1833; higher primary and classical schools of France. Report, 1890-91, Vol. I, pp. 95-124.

Education in France: Outline of the system and statistics for 1892, state faculties; proposed transformations and development of teaching functions. Report, 1891-92, Vol. I, pp. 73-95.

Civil service in France. *Ibid.*, pp. 369-412.

TOPICAL OUTLINE.—*Statistical summary.*—Detailed view of primary instruction, 1891-92, and comparison with 1837-38 after the report of the statistical commission: Classification of schools; school enrollment; average attendance; high schools; teachers, number, qualifications and salaries; school buildings and equipments; auxiliary agencies; finances; results of elementary instruction.

Summary of educational statistics.

Classes of institutions.	Date.	Enrollment.		Teachers.		Current expenditures.
		Male.	Female.	Men.	Women.	
Primary schools (public and private):						
Infant schools (écoles maternelles), ages 2 to 6.....	1891-92	325, 841	353, 738		8, 753	
Elementary primary schools (public and private), ages 6 to 13.....	1891-92	2, 805, 849	2, 750, 621	66, 363	80, 311	
Total		6, 236, 049		153, 427		a \$37, 261, 215
Secondary schools:						
Public, ages 8 to 20.....	1892	85, 291	11, 603			
Private, ages 8 to 20....	1892	89, 506				
Normal schools:						
Primary, ages 16 to 20..	1892	3, 878	3, 707	b 890	c 721	
Universities:						
Faculties—						
Public.....	1893	23, 397				
Private.....	1893	988				

a Public primary only.

b Including 181 directors and household officials.

c Including 141 directors and household officials.

¹ Prepared by A. Tolman Smith.

The system of public education in France has been considered very fully in the three preceding reports of the Commissioner. Every year sees some modification in the details, but the essential features of the system remain unchanged. Characterized in brief, it is a highly centralized system under the direction of the minister of public instruction, fine arts, and worship.¹ His control is exercised through a graded series of appointed officials belonging to the central administration or to the académies (17 in number, including 1 in Algiers), which are the local subdivisions of the system. Public instruction is a state service, professors and teachers constituting a professional order whose qualifications, duties, privileges, honors, emoluments, and penalties are as rigidly fixed by law as those of other branches of the civil or those of the military service.

Professional judgment and experience are brought to bear upon the conduct of the system through the councils, i. e., the superior and academic, the majority of whose members are chosen by their peers from the several teaching orders.

The public scholastic institutions are grouped in three classes—superior, secondary, primary—corresponding to three departments of the central administration. The affairs of each are separately administered. On the scholastic side the secondary and superior institutions are closely coordinated; the course of study of the primary schools is also made continuous with the modern secondary course. Private institutions flourish side by side with the public; the former are also subject to the general supervision of the minister and his agents.

The principal statistics of public and private instruction, as presented in the latest official reports, are given in the foregoing summary. The summaries relating to primary instruction are from the latest volume prepared by the commission on the statistics of primary instruction. The same report is the source of the detailed information which follows. The particulars considered are such as show the progress or the actual efficiency of the schools in respect to matters of general interest. Before proceeding with the statistical analysis it may be well to note that the commission, whose report is here reviewed, was constituted in the ministry of public instruction and fine arts, March 15, 1876, and has issued altogether five reports. The first, bearing date 1878, covered the school year 1876-77; the second, 1880, presented in comparative view all the statistics that had been collected from 1829 to 1877, inclusive; the third and fourth covered, respectively, the years 1881-82 and 1886-87. The present volume deals with the year 1891-92 and also with the quinquennial period 1887-1892. These successive reports have been published in the years of the quinquennial census, an arrangement which facilitates the comparisons between the school population and school attendance.

¹M. Poincaré was appointed to the office January 26, 1895, replacing M. Leygues, who had been appointed the June preceding. January 27, 1895, the ministry of worship was attached to the province of this minister.

In the intervening years the minister of public instruction has published an annual summary of the state of primary instruction. The sources of information for these annuals, as also for the more detailed quinquennials, are chiefly the annual statement submitted by the primary inspectors (450 in number) for their respective districts and by the academic inspectors of each department. These are collated by the central commission. The financial statistics are drawn in the same way from the annual accounts of the prefects of departments and the detailed statements of receipts and expenditures prepared annually for the Government.

PRIMARY SCHOOLS, CLASSIFICATION AND SUPPLY.

The classes of primary schools recognized under the law of October 30, 1885, are infant schools (*écoles maternelles*) for children 2 to 6 years of age, elementary primary schools for children of the obligatory school period, 6 to 13 years of age, and superior primary or high schools. Every commune must support at least one public primary school unless especially authorized to combine for this purpose with another commune (law of 1833), and every commune of 500 inhabitants must maintain a separate school for girls (law of April 10, 1867) unless authorized to substitute a mixed school (for boys and girls.)

The extent to which these requirements have been met in 1891-92, and comparison in this respect with 1886-87, are shown by the following statistics:

[France and Algiers included.]

	1886-87.	1891-92.	Per cent increase or decrease.
Communes:			
Total number.....	36,461	36,492	+ 0.08
One or more public schools.....	35,332	35,525	+ .5
One or more private schools.....	87	46	— 24.7
United with other communes in maintaining a public school.....	964	871	— 9.5
No school.....	98	50	— 49.00
At least one public school for girls.....	21,669	21,032	— 2.93
More than 500 inhabitants.....	19,403	19,021	— 1.9
At least one public school for girls.....	17,717	17,594	— 4.95
Only a private school for girls.....	970	772	— 20.00
No special school for girls.....	716	655	— 8.52

From the foregoing table it is evident that the provision of public schools increases. Only 50, or one-tenth per cent of the whole number of communes, remain to be brought into compliance with the law. The provision of separate schools for girls accords with the sentiments which long adherence to the Catholic Church has fostered in the common people of France. The number of communes making such provision exceeds the number coming under the provisions of the law of 1867, although a few communes having the required population have not fulfilled the law.

The table refers to the elementary primary schools (i. e., for children of the obligatory school ages, 6 to 13). It may be added that the establishment of an infant school (*école maternelle*) is obligatory only for communes having a population above 2,000 inhabitants, of whom at least 1,200 are collected at one center. The number of such communes is about 8,000 and the number of infant schools 5,411 (public, 2,603; private, 2,808). In reality, the commission say less than 3,000 communes are without an infant school or an infant class attached to a primary school.

School enrollment.—The enrollment in primary schools (public and private) is for France alone, 5,471,402; for Algiers, 85,068; total, 5,556,470. Since 1886-87 there has been a loss of 40,000, or seven-tenths per cent, in the total enrollment, and of 54,963, or nine-tenths per cent, in that of France alone. To understand the bearing of this fact it will be necessary to follow the report in its analysis of school population and enrollment. In this consideration Algiers is omitted.¹ The enrollment for France is equivalent to 14.35 per cent of the population (actually present, census 1891), as against 14.72 per cent of the population enrolled in 1886-87. Part of the loss in enrollment is accounted for by the relative diminution of the school population (i. e., ages 6 to 13), which was only 12.1 per cent of the total population in 1891, as against 12.4 per cent in 1886.² While the actual population of obligatory school age (6 to 13) was 4,663,671 in 1891, the enrollment for those ages in the primary schools was 4,408,268. The enrollment for the same ages in the infant schools (113,892) and in the elementary departments of secondary schools (64,413) brings the total to 4,586,573, about 77,000 less than the population of the ages specified. Of these 5,000 were known to be receiving instruction at home. As to the remainder, a little above 1 per cent of the school population, it is not to be supposed that they have never been or will not be instructed. The laws regulating child labor,³ together with the law of compulsory education, form an effectual

¹ For obvious reasons comparisons between school enrollment and population in Algiers would be valueless, so far as European countries are concerned.

² The diminution in the ratio of school population to total population is attributed by the report to the low rate of births and to immigration, which is almost wholly of adults. That the ratio is below the average of other countries would be explained by the same reasons, with the added consideration of the strong vitality of the French adult population.

³ (France. Law of June 2, 1874). Children below 10 years and girls below 21 years shall not be employed in any work on Sundays by their patrons, in manufactories, mines, wood (or dock) yards, and workshops. In workshops where constant fires are kept up children may be employed on Sundays and holidays in indispensable work conformably to the public administrative regulations.

(a) Children shall not be employed in any kind of work before having completed their tenth year.

(b) Restrictions with respect to children from the beginning of their eleventh year until their twelfth year complete:

safeguard against illiteracy, provided they be enforced. The machinery for enforcing the laws exists; nevertheless, the opinion is expressed in the report of the commission that in some localities the authorities have relaxed their vigilance in these matters. It is further suggested that discrepancies between the census and the school tabulations may have arisen from different constructions of the age limits. It is evident that a portion of the children of school age not enrolled belong to the floating population (mariners and foreign merchants), passing from school to school, one day here and another there, and being actually registered nowhere. That there is quite a large contingent of such children appears from the fact that certain localities have established special schools for them. The number of children under 6 years of age enrolled in the elementary primaries is 545,706 and in the infant schools 567,856, a total of 1,113,562, just about 41 per cent of the whole population of those ages. Of youth 13 to 16 years of age, 525,055, or 23 per cent of the census number, were on the rolls of the primary schools.

From comparison of the statistics for 1891-92 with those of 1886-87, it appears, (1) as regards children of the obligatory school age (6-13), that the census shows a decline of 1.4 per cent between 1886 and 1891,

1. No child must be employed unless it be shown that he actually attends a public or private school.

2. Children of this age must not be employed except in industries specially designated by a public administrative regulation (spinning factories of all classes, twisting work, printing on cloth, paper industries, glass manufacturing work, etc.).

3. Children shall not be subjected to work for any length of time exceeding six hours a day.

4. The working hours must be divided by a recess.

5. Children shall not be employed in any kind of night work. All work between 9 o'clock in the evening and 5 o'clock in the morning is considered night work.

6. They shall not be employed in work on Sundays or legal holidays.

(c) Restrictions with respect to children from the beginning of their thirteenth year until their fourteenth year complete:

1. They shall not be employed more than twelve hours a day. Before the age of 15 years complete, no child shall be permitted to work more than six hours a day except it be proved that he has acquired an elementary primary school education.

2. The working hours shall be divided by recesses.

3. They shall not be employed in any night work.

4. They shall likewise not be employed in any work on Sundays or legal holidays.

5. The work of children in subterranean passages is not permitted, except under the special conditions determined by the public administrative regulations.

(d) Exceptions:

1. In workshops where continued fires are maintained children may be employed at night or on Sundays and holidays in work determined by the public administrative regulations.

2. The public administrative regulations determine the different kinds of work which, because they are sources of danger to children or exceed their strength, are prohibited.

3. Children can not be employed in the manufactories and workshops indicated in the official list of unhealthy or dangerous establishments except under the special conditions set forth by the public administrative regulation.

and the school registers (all classes of schools included) a loss in enrollment of 3.3 per cent during the same time. This diminution has occurred wholly in public schools, the private primary schools showing an increase of 14 per cent in their enrollment. (2) The census shows a diminution of 3.8 per cent in the number of children from 2 to 6 years, inclusive, with only a decline of one-tenth per cent in the number of those ages enrolled in infant and in primary schools. (3) As regards youth above the obligatory school age, or from 13 to 16, there is shown an increase of 4.2 per cent between the census of 1886 and 1891 and an increase of 8.3 per cent in the number enrolled in primary schools (chiefly superior primary). The enrollment for these ages in 1891-92 was 25.5 per cent of the total population of these ages, as against 24.5 per cent in 1887.

DISTRIBUTION OF PUPILS IN VARIOUS CLASSES OF SCHOOLS.

The distribution of pupils in the various classes of schools is interesting as an index of the social influences affecting them. Here are to be considered the distribution in mixed and in separate schools for boys and girls and in secular (lay) and church schools. In these considerations Algiers is included. Under the first head it appears that for every 1,000 pupils enrolled in public primary schools 166 were on an average in mixed schools in 1891-92 (165 in 1886-87). At both dates 54 per cent of the pupils in mixed schools were boys and 46 per cent girls. In the private primary schools the proportion of pupils in mixed schools is much less, i. e., only 26 on an average in every 1,000. Here the proportion of girls is higher than that of boys, i. e., 61 per cent, as against 39 per cent. The fact of a slight increase in the enrollment in mixed private schools (9 per cent since 1887) indicates at least that the prejudice against coeducation for children is not increasing.

The following table shows for the first and last years of the quinquennial period the distribution of pupils in secular and in church schools, public and private:

	Secular schools.			Church schools.		
	Boys.	Girls.	Total.	Boys.	Girls.	Total.
1887-88:						
Public	2, 333, 372	1, 397, 179	3, 730, 551	154, 573	607, 770	762, 343
Private	59, 012	112, 002	171, 014	290, 567	662, 035	952, 602
Total			3, 901, 565			1, 714, 945
1891-92:						
Public	2, 318, 349	1, 434, 901	3, 753, 250	36, 969	490, 914	527, 883
Private	53, 955	93, 772	147, 727	396, 576	730, 984	1, 127, 560
Total			3, 900, 977			1, 655, 443

Ratio of pupils in the several classes of schools.

	Secular.	Church.
1887-88:		
Public.....	66.4	13.5
Private.....	3.1	17.0
1891-92:		
Public.....	67.5	2.5
Private.....	2.6	20.0

From an examination of the above tables it appears that the relative ratios of pupils in secular schools and in church schools were very nearly the same at the end as at the beginning of the period, being for the secular schools 70 per cent in 1891-92, as against 69.5 per cent in 1887-88, and in church schools 30 per cent and 30.6 per cent at the respective dates. The proportion of the pupils in the public secular schools varied slightly, the former gaining about 1 per cent and the latter losing one-half per cent on the total enrollment. In the church schools, on the other hand, the changes are more marked, public church schools losing above 4 per cent on the total enrollment, while private church schools gained 3 per cent. It appears that the loss in the enrollment of public church schools was very largely due to the transfer of boys to private schools, church and secular. This movement is an outcome of the execution of the clause of the law of October 30, 1886, relative to the "laicization" of schools; in other words, substituting lay teachers for those belonging to religious orders.

It was ordered that the law should be carried into effect with respect to all schools for boys in five years from its passage; that is, by October, 1891, whereas no limit was put to the time in the case of schools for girls. The ratios of actual gain or loss in the several classes of schools in the period considered, 1887-88 to 1891-92, are shown in the following table:

Class.	Secular schools.	Church schools.
Public.....	<i>Per cent.</i> + 0.6	<i>Per cent.</i> -30.0
Private.....	-13.6	+18.3
Gain or loss in total enrollment.....	— .01	-3.40

Average attendance.—The statistics of enrollment are of first importance as showing the actual spread of instruction. The details of the classification of pupils are interesting as an index of the relative strength of public and private schools. Neither of these particulars, however, gives any idea of the hold which the schools have upon the pupils. This, indeed, it is difficult to express by statistics; the item which bears most directly upon the subject, i. e., average attendance, does not seem to be kept at all in the registers of French schools. In place of this an enumeration is made from time to time, under the order

of the minister, of the actual number of pupils present on two days, one in the season of highest attendance, the other in the season of lowest attendance. Such enumeration was made at the beginning and at the end of the quinquennial period, with results as follows:

For every 1,000 pupils enrolled there were present on the days specified:

Schools.	Dec. 7, 1891.	June 7, 1892.	Dec. 7, 1886.	June 7, 1887.
Public	786	719	801	720
Private	865	849	879	866

These conclusions are supported by this showing:

(1) That the attendance in December is greater than in June, a fact easily explained, as in the latter month many pupils are withdrawn to work in the fields.

(2) That the average attendance was not so high in 1891-92 as in 1886-87.

(3) That average attendance is higher in the private than in the public schools. This difference is attributed by the report to the more favorable situation of the private schools, which are found chiefly in the cities and towns.

High schools and classes (Écoles primaires supérieures et cours complémentaires).—By a law of January 26, 1892, the superior primary schools, in which industrial or commercial training is the predominant feature, were transferred to the jurisdiction of the minister of commerce and industry, and are henceforth to be known as practical schools of commerce and of industry. The number of schools so transferred was 14, of which 12 were for boys and 2 for girls. They numbered, December 31, 1891, a total of 1,916 pupils, i. e., 1,511 boys and 405 girls. There remain under the joint authority of the minister of commerce and the minister of public instruction 43 superior primary schools (32 for boys, 11 for girls) and 4 complementary courses (3 for boys, 1 for girls) in which technical instruction is given, but does not form a principal feature. There are in addition under the jurisdiction of the minister of public instruction 259 superior primary or high schools, and 1,009 complementary courses for general instruction. Of the schools, 21 are private establishments, and of the courses, 531. This leaves 238 public high schools (not technical) and 478 courses. The statistics of these schools and courses are included in the totals already considered. They comprised in 1891-92 an enrollment of 45,599 pupils (32,806 boys, 12,793 girls), as against 38,441 in 1886-87. Of the total, 41,844, or 91 per cent, were in public establishments. Paris furnished 5,659 pupils in this grade, or one-tenth of the whole—a slight increase over its proportion at the beginning of the decade.

Of the public high schools, 101 have a two years' course and 180 a three years' course. Provision is made by scholarship funds (bourses)

for aiding promising pupils who could not otherwise continue their studies in the high schools. The number of pupils so aided in 1891-92 was 1,110 (674 boys, 436 girls).

Teachers.—The total teaching force of the primary schools was 155,427. Of these, 8,753 (all women) were in the infant schools, 5,100 in the public, and 3,613 in the private schools of this class. As to the 146,674 teachers in the primary schools proper (elementary and superior), 70 per cent were in the public schools and 30 per cent in the private. Of the former, 54 per cent were men, as against 56 per cent in 1886-87. Of the latter, 24 per cent, as against 21 per cent at the earlier date.

The classification of the teachers with respect to position and secular or clerical relations are set forth in the following table:

Primary schools.

TEACHERS.

	Public schools.			Private schools.		
	1886-87.	1891-92.	Per cent increase or decrease.	1886-87.	1891-92.	Per cent increase or decrease.
<i>Position.</i>						
Men:						
Principals	38,608	38,290	— 0.8	2,554	3,248	+27.2
In charge of a class	17,009	17,401	+ 2.3	5,868	7,424	+26.5
Women:						
Principals	28,874	17,902	+ .1	11,059	12,023	+ 8.7
In charge of a class	14,278	17,902	+25.4	20,405	21,493	+ 5.3
Total	98,769	102,486	+ 3.8	39,886	44,188	+10.8
<i>Class.</i>						
Men:						
Lay	53,073	55,559	+ 4.7	1,842	1,423	—22.7
Belonging to religious orders	2,544	132	—94.8	6,580	9,249	+40.6
Women:						
Lay	29,887	35,446	+18.6	6,923	6,186	—10.6
Belonging to religious orders	13,265	11,349	—14.4	24,541	27,330	+11.4
Total	98,769	102,486	+ 3.8	39,886	44,188	+10.8

The number of principals, i. e., of teachers directing a school (82,454), is not quite equal to the number of schools (82,533). This discrepancy is explained by the fact that the superior primaries or high schools, which are comprised in the total of the schools, are in several instances in charge of the same principal as a lower grade school. It is noticeable also that the total of all teachers, principals, and assistants is a little greater than the total number of classes—102,486 as against 100,815. This is due to the fact that in schools comprising as many as six classes and 300 pupils the principal is not charged with a particular class.

The law provides that mixed schools may be directed by either a master or a mistress. The greater proportion of masters employed in these schools, i. e., 70 per cent of the total, is explained, the report says, by the desire of the mayors of small communes to secure their services as secretaries.

As already indicated, there is, as a rule, a distinct teacher for each class in a school. An interesting view of the relation of teachers to the work of the schools is afforded by statistics showing the average number of pupils to a class. From these it appears that 88.9 per cent of the classes do not exceed 50 pupils. In 1887 this proportion was 84.8 per cent. The increased proportion of lay teachers in the public primaries and the reverse movement, i. e., increase in the proportion of church teachers in the private primaries, are due to the same causes as the transfer of pupils from secular to church schools already considered.

Classification of teachers with respect to diplomas—public and private schools.

	Men.		Women.	
	1886-87.	1891-92.	1886-87.	1891-92.
Principals:				
Elementary diploma (brevets).....	35,331	34,948	30,484	32,029
Superior diploma.....	6,206	6,434	3,359	5,970
Not having a teacher's diploma (non brevetés).....	128	156	5,165	3,817
In charge of schools:				
Elementary diploma (brevets).....		16,040		24,864
Superior diploma.....		7,671		8,164
Not having a teacher's diploma (non brevetés).....	1,072	910	6,478	6,295

In respect to the above showing it should be explained that teachers without a professional diploma may have an equivalent or higher guaranty of preparation in a university degree, i. e., the baccalaureate, or even, as is the case with many teachers in the superior primaries, the "licencié" or the doctor's degree. In fact all the men in charge of a school in 1891-92 had either a teacher's diploma or a degree, while of the women principals less than 12 per cent were without diplomas.

The decrease in the proportion of assistant teachers not provided with diplomas, which was noticeable in 1887 as compared with 1882, has continued during the last half of the decade, amounting to a decrease of 15 per cent in the case of men and of 4.2 per cent in that of women. As might be expected, the proportion of teachers in the public schools having diplomas is larger than of those in private schools, i. e., 98 per cent, as against 82 per cent. The proportion is, however, increasing in the private schools.

For the full title of teacher (titulaire) a diploma (certificat d'aptitude pédagogique) higher than the "brevets" is required. This diploma can not be obtained without at least two years' actual practice in teaching. The proportion of teachers possessed of the same increases as shown by the following table:

France and Algiers.

	Men having full title.		Women having full title.	
	1888.	1893.	1888.	1893.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
Principals.....	19.4	30.3	9.8	18.4
In charge of schools.....	46.0	49.0	24.2	25.1

Under the law of July 19, 1889, the State pays the salaries of primary teachers. Principal teachers are divided into three groups, viz, elementary, superior primary, and normal; each group is divided into five classes, with annual salaries fixed as follows:

	Primary schools.		Superior primary teachers.	Normal schools.	
	Men.	Women.		Men.	Women.
Fifth class	\$200	\$200	\$360	\$700	\$600
Fourth class	210	210	400	800	700
Third class	300	280	450	900	800
Second class	380	300	500	1,000	800
First class	400	320	580	1,100	1,000

An additional sum of \$40 is allowed principals in charge of a school of three or four classes, and of \$80 for a school of more than four classes.

Promotion from one grade of salary to the next may be made without a change of place; it depends upon the length and efficiency of service and can only take place when there is a vacancy. Moreover, teachers of the fifth and fourth classes can not be promoted to a superior class until after five years' service in the inferior position; no teacher is eligible to the second or first class who is not provided with the highest certificate (*brevet superieur*) and who has not served at least three years in the class preceding. It is, however, expressly provided that, so far as length of service affects promotion, teachers having served ten years may be placed in the fifth class; fifteen years, in the fourth class; twenty years, in the third, and twenty-five years, in the second.

Assistant teachers in primary schools are paid \$160. Assistant teachers in superior primary schools, from \$220 to \$420.

In addition to his salary every teacher must be provided with a residence or with a money equivalent for the same. The law imposes this provision upon the communes and fixes the rates of indemnity for residences.

Cities of more than 150,000 inhabitants are not included in these provisions. Their schools are maintained by municipal funds, excepting that the State may contribute thereto a sum not exceeding the product of 8 centimes additional to the direct taxes.

TRAINING OF TEACHERS.

The law requires every department to maintain two normal schools, one for men, the other for women, unless authorized to unite with another department for this purpose. In 1886-87 only one of the 90 departments was without a normal school for men. Since that year the number of these has been reduced to 87 by the union of departmental schools in two cases. Meanwhile the number of normal schools for women has risen from 81 to 85. The schools for men employed a

force of 124 directors 413 regular professors and teachers, and 353 special instructors, and had an enrollment of 3,878 students. The normal schools for women employed 141 directors, 361 regular professors and instructresses, and 219 assistants. Their enrollment was 3,707. From 1887 to 1892, inclusive, the schools for men had a total of 7,189 graduates, as against 8,054 in the five years preceding, and the schools for women 5,615, as against 4,285.

It may be added that the professors in the departmental normals are, as a rule, graduates of the State normal schools, St. Cloud (for men) and Fontenay-aux-Roses (for women). In addition to the public normal schools, there are the following private institutions for the professional training of teachers: Institut des Frères de la Doctrine Chrétienne, a Protestant normal school, Boissy St. Léger, and the school of the Alliance Israélite.

SCHOOL BUILDINGS AND EQUIPMENTS.

The buildings for primary schools of all grades are, as a rule, the property of the communes. This is the case as to 53,362 schoolhouses or groups of buildings, leaving 9,870 rented. The number of public primary schools having a gymnasium, more or less complete, is 6,234, an increase of 642 above 1887. There are also 752 schools provided with a workshop, 52,309 with a garden, an increase above 1887 of 286 in respect to the former and of 1,965 in respect to the latter. The following statistics pertain to the chief auxiliary agencies for promoting popular instruction:

	Libraries.		Books.		Books loaned.		Increase or decrease.
	1886-87	1891-92	1886-87	1891-92	1886-87	1891-92	
School libraries	35,329	39,645	4,453,875	4,858,120	5,465,103	6,862,350	<i>Per cent.</i>
Teachers' libraries	2,683	2,861	895,367	1,006,421			26
Circulating library of the Musée Pédagogique					2,524	4,118	

School savings banks (caisses d'épargne scolaires.)

Year.	Number of banks.	Number of depositors.	Amount deposited.
1886-87	22,642	493,727	\$2,554,775
1891-92	19,826	419,896	2,589,051

The number of school savings banks diminishes from year to year. In part this is explained by the fact that many teachers prefer to substitute for the school bank the postal savings bank.

Funds for aid of poor children (caisses des écoles).¹

Year.	Number.	Amount.	Amount distributed.
1886-87	17,080	\$1,039,590	\$716,841
1891-92	16,121	1,032,612	804,255

Teachers' mutual beneficial associations are numerous. They showed in the year under review a total of 46,643 members, with funds amounting to very nearly \$1,500,000.

FINANCES.

The current expenditure for public primary education, including the maintenance of the primary normal schools, has increased about 7 per cent since 1887, rising from \$34,648,211 to \$37,261,215. This amount was distributed as follows: Expenses of inspection, \$449,312; obligatory expenses of primary schools, \$29,768,032, or 79 per cent of the total; normal schools, \$1,856,849; divers expenses, chiefly optional with the communes, \$5,187,022. Of the total above given, the State furnished 87.9 per cent, as against 49 per cent in 1887. This great increase in the proportion furnished by the State is a result of the law of 1889, under which the State assumed the payment of the teachers' salaries. The expenses per capita of pupils in the public primary schools, infant schools included, rose from \$6.61 in 1887 to \$7.57 in 1892. Upon the supposition that the cost per capita is about the same in private as in public primaries, the expenditure for the former would be about \$12,000,000, which would swell the total expenditure to very nearly \$50,000,000. The expenditure for buildings for public primary schools amounted in the fifteen years ending with 1893 to \$118,800,000, and for normal schools to \$8,000,000.

RESULTS OF ELEMENTARY INSTRUCTION.

It is not easy to determine the immediate outcome of a system of popular instruction, or at least to state this in any precise terms. The report deals, however, with several conditions bearing upon this inquiry: First, as to the certificates of primary study awarded upon the results of examination for which children may present themselves at 11 years of age and upward. The number who passed the examination in 1891-92 was 175,675 (boys, 96,412; girls, 79,263), an increase of 30,541 in five years.

The high school diploma (*certificat d'études primaires supérieures*) created by a decree of December 28, 1882, was awarded to 1,850 candidates (1,132 boys, 718 girls) in 1892 as against 1,212 in 1887. The report also gives a detailed statement as to the course taken by high school pupils immediately after leaving the school.

¹ Every commune is required to maintain such a fund, if needed, under the law of 1882.

The facts thus presented may be summarized as follows:

	1887.	1892.
	<i>Per cent.</i>	<i>Per cent.</i>
Entered into normal or technical schools.....	11.3	23.0
Entered into lycées or colleges.....	5.3	.....
Entered as instructors in other schools.....	1.5	.1
Entered into the civil service.....	3.8	8.9
Entered into military or naval service.....	2.4	1.4
Employed in railroad service.....	1.6	1.5
Employed in commercial or technical careers.....	56.8	60.0
Employed in banks, notaries public, etc.....	6.3	1.7
Scholarships secured for study in foreign countries.....	.....	.6
Unknown or dead.....	11.0	7.8

The statistics indicating the degree of illiteracy are given under two heads, as follows:

	1886.	1891.
	<i>Per cent.</i>	<i>Per cent.</i>
Conscripts able at least to read.....	89.7	92.6
Brides able to sign the register.....	79.8	a 87.4

a The proportion of bridegrooms signing the marriage register is almost the same as in the case of conscripts.

As to these items the commission say: "They prove but little and moreover relate to persons who have been out of school eight years or more. It is, however, noticeable that departments which stood lowest ten years ago have made greatest advance. In 1881, as regards conscripts able to read, the difference between the highest and the lowest department was 40; that is, for every 100 conscripts there were 40 more in the latter unable to read. In 1891 the difference was only 26.

It is interesting to note that the diffusion of elementary instruction has greatly reduced the need of provision for instruction among conscripts.

Regimental schools are no longer an indispensable feature of military camps, and under an order of December 27, 1887, instruction is to be provided for recruits only where it is actually needed.

Schools for marine conscripts are still maintained, but since 1883 only those recruits are accepted who can read and write. Schools are maintained in all prisons and a classified record kept of the status of criminals with respect to their attainments at the time of their commitment and of their discharge.

Two facts are emphasized by these statistics: (1) That the proportion of illiterate criminals diminishes, although for the majority the degree of attainment is very low. For example, of 10,420 men under detention in 1889-90 a little less than 9 per cent had finished the primary course; a very small proportion, $2\frac{1}{2}$ per cent, had been in the high schools. The proportions were almost identical for women prisoners. (2) A certain proportion of criminals seem incapable of instruction. In 1890, of men prisoners under instruction, 18 per cent, and of women

12 per cent, were reported as remaining illiterate after a year's instruction. So of 12,706 persons (men and women) committed in 1890 on short sentences 16 per cent were reported as illiterate at the time of their discharge, although they had been under instruction in the interval.

Comparative view of the enrollment in university faculties, secondary schools, and primary schools at specified dates.

NUMBER OF STUDENTS OR PUPILS.

	1875.	1876.	1876-77.	1887-88.
Faculties:				
Public—				
Paris.....	} 17,630			{ 9,140
Provincial.....				
Private.....				8,486
Secondary schools (lycées and colleges):				262
Public.....		75,259		a 87,979
Private.....		78,065		70,250
Primary schools:				
Public.....			3,823,348	4,492,894
Private.....			891,587	1,123,616
Total (primary).....			4,716,935	5,616,510

	1888-89.	1889-90.	1890-91.	1891-92.	1892-93.
Faculties:					
Public—					
Paris.....	}		20,785	{ 9,387	10,110
Provincial.....					
Private.....			931	12,679	23,237
Secondary schools (lycées and colleges):					988
Public.....	84,775	84,186		b 85,291	
Private.....		90,327		89,566	
Primary schools:					
Public.....	4,446,851	4,405,543	4,384,905	4,281,183	
Private.....	1,176,550	1,196,024	1,208,978	1,275,287	
Total (primary).....	5,623,401	5,610,567	5,593,883	5,556,470	

a Also 10,403 students in public secondary schools for girls.

b Also in 1891 11,645 students in public secondary schools for girls.

CHAPTER VII.

EDUCATION IN CENTRAL EUROPE.

BETROSPECTIVE VIEW OF THE BUREAU'S PUBLICATIONS ON THE SUBJECT, SINCE 1889. •

The annual report of the Bureau of Education for 1888-89, Part I, contains in chapter 2 a comparison of the schools of the United States, Germany, and France, with large diagrams giving the number of pupils and other items of information, in squares, each representing 5,000 pupils. This chapter also contains a graphic representation of the courses of study in American, German, and French elementary and high schools with reference to linguistic studies, history and geography, mathematics and natural sciences. For purposes of easy comparison typical courses of study are quoted and placed side by side, showing in what branches one kind of schools excels and in what branches it is excelled. The chapter closes with some extensive quotations from foreign educators.

The same annual report contains two charts which show graphically the ratio of entire population in schools between kindergarten and university of every State and colony in North and South America, and also in Europe. These charts have been reproduced in a different manner and brought up to date in the succeeding annual reports of 1889-90 and 1890-91.

Chapter 5 of the annual report of 1888-89 also contains a bird's-eye view of the schools of Germany, Austria, and Switzerland, which gives in brief manner their historical development, together with statistics and diagrams.

The annual report of 1889-90 has accounts of the so-called middle or intermediate schools in Prussia, of private schools in Prussia, of the movement for promoting public play of school children, of the education of neglected and depraved children, and of juvenile wage workers in Prussia. The schools of the Kingdom of Saxony are described and their statistics given in detail. A diagram exhibiting the economic development of the Kingdom of Saxony between the years 1875 and 1889 brings out some curious facts. A brief article on school gardens gives a résumé of what is done in that respect for the children in Europe.

The famous December conference on secondary schools was called and in part conducted by the Emperor of Germany, who had insisted upon reforming the secondary schools, which he believed to be incapable of meeting the just demands of the present age. This conference consisted of some of the most distinguished educators of Germany, and their views and deliberations are sketched in an article found in the same annual report of 1889-90, which also contains a brief view of the schools of Austria-Hungary, a brief statement of the school system in Prussia, and a diagram showing the proportion of the population in elementary, secondary, and higher institutions.

In view of the fact that the authorities in Germany publish school statistics only at intervals of three years, no new statistical features could be obtained in the following year; hence, in order to do full justice to the important educational interests of central Europe, the annual report of 1890-91 contains an account of the industrial and technical education in central Europe, in which the lower, secondary, and higher institutions for technical and industrial education are described and in part compared. A statistical view is appended.

The same annual report contains a statistical summary giving, first, the total number of youth in schools below universities in the various civilized countries of the world; second, the teachers; and third, the expenditures so far as obtainable. All data offered in these tables are given in absolute numbers as well as in ratios.

Legal education is also a topic discussed in the annual report of 1890-91. It does not confine itself to America, but extensively describes the European law courses, and presents a comprehensive bibliography of legal education. Volume II of the same annual report opens with a review of the history and status of public kindergartens in European and American States, written by Dr. W. N. Hailmann. The article is illustrated.

The next annual report of the Bureau, that for 1891-92, has in chapter 6 an article on the training of teachers in Germany, Austria, and Switzerland, in which an historical review, statistics, rules, and regulations of European normal schools, their present management and course of study, as well as views of normal school men concerning the training of teachers, are given.

The Swiss school system finds attention both historically and statistically in the same volume. The exhibitions in various countries of appliances for teaching are briefly enumerated and sketched in the same report.

Chapter 10, on German universities, was translated from a work prepared by Professors Paulsen and Conrad for the World's Fair in Chicago. The historical reviews and reflections on the present status of the universities in Germany by Professor Paulsen and the minute statistics of Professor Conrad have attracted wide attention.

Chapter 11 of the volume mentioned contains an account of the schools for recruiting the civil service in France and a statement of the requirements for civil service in Prussia, prepared by Profs. W. F. and W. W. Willoughby.

The annual report of this Bureau for 1892-93 contains a discussion of recent developments in the teaching of geography in central Europe, giving first a historical sketch of geography as a study in schools, then a discussion of geography in the schools of to-day; then a contribution of Professor Goodison of the State normal school, of Ypsilanti, Mich., on modern methods and devices of teaching geography in central Europe, illustrated copiously, and followed by accounts of personal observations in schools of Germany. This chapter also concludes with a bibliography on the subject of geography.

The schools of Bavaria, like the schools of Saxony in previous reports, are reviewed by a correspondent of this Bureau at Munich.

The important recent movement toward a profound study of psychological phenomena has resulted in the formation of a society for child study and experimental psychology. The annual report of 1892-93 gives a symposium on that subject, which contains a number of full papers and extracts of papers prepared by eminent educators of the United States.

This is followed by a chapter on German criticism of American education and education exhibits by noted German educators who were sent by their Government to Chicago for the purpose of reporting upon the exhibits in Chicago as well as the schools. These accounts go into minute details where their authors were brought face to face with features of American life and educational efforts new to them. Naturally they are not always absolutely correct, but it is surprising to notice the felicity with which they point out the excellent features of the schools as well as their weak points. The educational congresses held in connection with the Fair are amply treated by these authors, as is also the congress of the librarians.

The report on American technological schools, reprinted in English translation from a German publication, sheds light on this feature of the educational world, and the observations the author makes prove him to be impartial and just. His numerous diagrams bear evidence of a diligence in comparing statistics worthy of imitation.

The statistical table of elementary instruction in foreign countries is for the first time in the history of this Bureau complete with regard to the States of Germany. The Prussian statistical bureau has undertaken to furnish a summary for all the States of Germany, thus enabling the world to judge of the combined efforts in behalf of public education of the united German Empire.

RESULTS OF PRUSSIAN COMMON SCHOOL STATISTICS OF THE YEAR 1891.

INTRODUCTION.

The school authorities of Prussia, Bavaria, and other States of Germany publish at intervals of three or more years summaries of school statistics and detailed accounts of the changes occurring. The last comprehensive publication on Prussian and Bavarian schools was prepared for the Chicago World's Fair. The summaries offered then were used in the annual report of this Bureau for 1892-93, and a recapitulation of official data would be unprofitable. The data were freely commented upon, chiefly in a laudatory manner, by the German commissioners to the World's Fair (see pp. 521-575 of Ann. Rep. of 1892-93); but since then a number of weighty criticisms have appeared, which place the statistical facts offered in the proper focus and analyze them from the standpoint of modern demands. No hostile motive prompted these efforts, for the minister of public education himself frankly admits that he is struggling to obtain "the daily bread with which to maintain the schools;" and it is conceded, even by opponents of the Government, that the authorities make every effort to keep public education abreast with that of other countries and in harmony with its own glorious past.

In the two following articles on "Results of Prussian school statistics of 1891" a calm, dispassionate analysis of the official data is offered, adapted from a work of the same title by Mr. J. Tews, of Berlin. This critical exposé sheds light on Prussian elementary school statistics which are apt to escape observation. The author is a master in grouping, analyzing, and comparing statistical data, and hence his statements are readily accepted in the press of Germany and other countries.

The author divides his exposé into two articles: (1) "The common elementary schools," and (2) "The teachers of common elementary schools," which articles are offered here in English garb stripped of all unnecessary and irrelevant matter. The author subsequently published another article on the courses of study, which, however, goes beyond the scope originally contemplated, and is therefore omitted in this translation.

PART I.—THE COMMON SCHOOLS OF PRUSSIA.

Statistics of Prussian common schools, dated May 20, 1886, proved that the provisions for education in the "land of schools" were inadequate, and no one well informed in the case extenuated existing facts. A retrogression has been officially confirmed. Undoubtedly there are substantiating facts that make the retrogression in the provisions for public education and teachers' salaries appear less glaring. A difficult

task confronted the Prussian administration of education early in the eighties. The number of pupils in common schools rapidly increased in eight years (from 1878 to 1886) from 4,200,160 to 4,838,247 children; between 1882 and 1886, from 4,339,729 to 4,838,247 children; consequently about 13 per cent and 10½ per cent, respectively. Such an augmentation could only be managed by straining every power; instead, it was oftener the case that everything went on in the old ways.

Statistical publications of Prussian common schools until then awakened little interest, but the publication of 1886 attracted special attention. The exposed evils not only aroused teachers, but in a great measure were animadverted upon by the press. Consequently the latest reports, of May 25, 1891, supported by facts and events, fell upon well-prepared ground. The question in the minds of all who consulted the two ample volumes was, Do they show a forward or a backward movement; have school administrators been occupied in rectifying the existing deficiencies, or have they meekly looked on the decline of the States' educational institutions? The exhibition of statistics prepared for the Exposition in Chicago did more than was necessary to direct public attention to the authoritative sources of Prussian statistics.

Nothing can be more easily misused than statistical data. Irrespective of the not infrequent cases in which correct statements are intentionally misapplied, few only are able to read a statistical work intelligently. Absolute figures are never understood easily; they should always be taken in their relative, comparative value. The question, therefore, whether a school system has made satisfactory progress within a certain period, is not to be judged offhand according to a few figures, but demands a careful examination and comparison of all relevant factors. A mere increase in number is of itself no satisfactory progress. Presupposing, for instance, that teachers' salaries during a certain period averaged an increase of 100 marks, but that cost of living and the payment of other officials at the same time increased in greater proportion, there would necessarily follow a manifest retrogression in the mode of living and social position of teachers. Or if the number of pupils to every teacher diminished from 70 to 60 within a certain time a satisfactory progress would only have been attained, if this improvement were not behind similar improvements in other States. From this point of view, all that has been done for the promotion of education in Prussia since the seventies is inadequate, as other German States, France, and Austria as well, have in the meantime accomplished incomparably more. In the order of States, if measured by their educational efforts, Prussia has taken a place in the rear.

The task of improving Prussian common schools between 1886 and 1891 was comparatively easy. Whereas the increase of pupils was unusually large from 1878 to 1886, the period since 1886 shows only a minimum increase in the whole State, and even a decrease in many localities, notably in the country. While the entire population be-

tween 1885 and 1890 increased 5.8 per cent, namely, from 28,318,470 to 29,959,388 persons, the number of school children increased only 1.4 per cent, namely, from 5,225,891 to 5,299,310. In 1886 the number of children of school age (6 to 14) constituted 18.4 per cent of the entire population; in 1891 only 17.6 per cent. The number of children attending common or people's schools increased in a little larger proportion, from 4,838,237 to 4,916,476, i. e., 1.62 per cent, while private schools, elementary and other, show a decrease in the number of pupils. An increase of pupils has only taken place in cities and in a few country districts, particularly in the west. In most rural districts the number of pupils has diminished. This decrease is particularly noticeable in the districts of Königsberg (−10,000), Gumbinnen (−6,200), Frankfort (−4,000), Cöslin (−5,500), Breslau (−14,500), Liegnitz (−4,200), Cassel (−4,300), Cologne (−8,000). The retrogression is not so considerable in the districts of Marienwerder, Stettin, Posen, Bromberg, Erfurt, Schleswig, Lüneburg, and Wiesbaden, and altogether insignificant in Danzig, Stralsund, Hildesheim, Stade, Osnabrück, Aix-la-Chapelle, and Hohenzollern. A considerable increase of rural pupils took place only in the districts of Potsdam (+8,000), Münster (+4,300), Arnsberg (+12,800), Düsseldorf (+6,500), and Trier (+7,500). The year 1891, compared with 1886, showed that among the school children of the whole State there were 41,500 fewer in the country and about 111,500 more in cities. With reference to the religious denominations it is noteworthy that in many districts the number of Catholic pupils was comparatively below that of the Protestant; while the number of Jewish pupils, both in cities and country, diminished.

If the school administration had desired to leave affairs in the same condition during the five years in question, then additional institutions would have been necessary for only 78,229 newly admitted children. As in 1886, there was one teacher for every 75, and one class room for every 64.4 children, the odium of a retrogression would have been avoided by creating 1,043 teachers' positions and forming 1,215 classes.

The question follows, Were these favorable conditions taken advantage of? The author attempts the answer in the following:

The difficulty of educational administration varies in the different divisions of the State. In the first place, there is a great difference in the number of children in various communities. The least number of school children, in general, is found in the governmental districts of Potsdam, North Saxony, East Hanover, North Schleswig, East Prussia, parts of Lower Silesia, and the districts bordering on the Netherlands. The minimum is reached by the Hanoverian district of Lüchow, with 15.1 per cent school children, followed by Löwenberg (Silesia), with 15.8 per cent, and West Priegnitz (Brandenburg) with 16 per cent. The whole territory between the Vistula and the Oder (Posen, Upper Silesia, west Prussia, the governmental district Cöslin), South Hanover and South Saxony, and the whole territory between the Rhine

and the Weser, together with North Hanover and Holstein, have comparatively few school children. The maximum is reached by the districts of Schmiegel, in Posen, with 22.9 per cent; the town of Essen follows with 22.6 per cent, Hoerde with 22.4 per cent, and Kosten (Posen) with 22 per cent. To understand the true value of these figures, we must bear in mind that with the ratio of children in Lüchow, Prussia would be obliged to accommodate in school 4,526,868 children, but 6,860,810 with the ratio found in Schmiegel. This fact alone suffices to demonstrate that the principle of common schools should not be so rigidly carried out that the community would have to bear the full burden of expense. Educational efforts of larger cities appear very modest when compared with reference to the number of children they accommodate, as may be demonstrated by a proximate example. In 1890 the province of Pomerania had somewhat fewer (1,520,889), and Hesse-Nassau (1,664,426) more inhabitants than Berlin (1,578,794), but in 1891 Pomerania had 251,229, Hesse-Nassau 268,627, and Berlin only 175,620 children to provide for in the public common schools. Pomerania needed 4,672, Hesse-Nassau 5,027, and Berlin only 3,206 class rooms for instruction. In view of these figures, it appears more pardonable that Pomerania should have only 4,264 and Hesse-Nassau but 4,254 schoolrooms, than that Berlin should lack apartments for four classes only. Pomerania had 4,192, Hesse-Nassau 4,147, and Berlin 3,203 teachers. Nevertheless, large cities are still in the front rank, but not so far ahead as is generally believed.

The Prussian common school is very far from being, as it is usually idealized, the common elementary school for all. Unfortunately, statistics do not furnish information enough on this point. They register the number of children in obligatory attendance at common or other schools, but do not specify how many nonattendants receive instruction in the elementary classes of secondary schools for boys and advanced schools for girls.

Altogether 4,916,476, or 93 per cent, of the 5,299,310 children of school age, were placed in common schools; in cities, 1,615,455, or 85.4 per cent, of the 1,891,031 children of school age; in the country, 3,301,021, or 97 per cent, of 3,408,279. The laws of 1888 and 1889 have brought about a perceptible rearrangement of schools in many cities. Since the limit between the common schools and institutions beyond their scope have been strictly defined, many have been removed from the category of common schools to that of intermediate or middle schools, and vice versa. Many of the larger cities are still far from recognizing the general common school as the common foundation of all higher educational institutions; meanwhile, an approximation to this end is noticeable.

Königsberg has 11,391 of its 22,211 children in obligatory attendance in common schools; Danzig has 12,289 of its 17,792; Berlin, 175,620 of 212,681; Charlottenburg, 7,115 of 10,442; Stettin, 11,109 of 16,493;

Posen, 5,725 of 10,869; Breslau, 39,260 of 49,156; Frankfort on the Main, 12,902 of 23,580. On the other hand, in many cities of the west the common schools are attended by the majority of children. In Dortmund there are 16,286 common school pupils to 16,793 school children; in Crefeld, 17,854 to 19,224; in Essen, 12,941 to 14,215; in Bochum the number in attendance even exceeds the number of children of school age (9,854 to 9,224), probably on account of earlier admission and longer attendance at school. The above figures show in a general way how differently private schools, elementary classes of secondary schools, and so-called middle schools have developed.

That a number of Prussian children of the laboring population do not in name even attend school during the whole time required is well known; but it is not uninteresting to compare the respective figures. In the spring of 1891, 3,229 children (2,431 of them in Posen) could not be admitted because of overcrowded schools; 17,527 children are mentioned as not having entered school at the completion of their sixth year, but were kept back one or two years; 62,838 were allowed to leave school before the completion of their fourteenth year; 20,945 of the latter belonged to Rhenish Prussia and 13,566 of them to the district of Düsseldorf. The last figures probably indicate children permitted by the superintendent to leave school. In reality a much larger number leave before the legally appointed time, to lose in a short time in factories and industrial work a great deal of what has been acquired at school, if liberal provision is not made by establishing continuation schools.

After these digressions let us examine Prussian schools more closely. Prussian statistics, unlike the Austrian, by way of example, do not refer to the accommodations. Counts Brühl and von Buch, in the House of Deputies, say the schoolhouses are palaces; Representative Rickert is of the opinion that there are many dilapidated huts among them. The statistical report is noncommittal on this point. Only 70,950 class rooms were provided for 82,746 classes, so that not fewer than 23,592 classes were obliged to share apartments with others. If we deduct rented class rooms there remain only 68,593 owned by the State. In 1886 there were 62,095 for 75,097 classes. At that time 13,602 (in 1891 14,153) classes lacked their own rooms.¹

In regard to the construction of school buildings also a retrogression is noticed. Minister von Gossler's demand for 20,000,000 marks for school buildings was not regarded in the least exorbitant, and the Clerical-Conservative majority in the Diet gave the strongest evidence of their friendly attitude toward schools when they voted down the

¹ It is a hygienic requirement that each class, even in half-day schools, should have a class room of its own. Anyone acquainted with the A B C of school hygiene will not consider this demand unreasonable. It borders on inhumanity to oblige children of widely different ages to sit on the same benches; to instruct a second class in an already vitiated atmosphere and let the other class wait outside in all sorts of weather.

lump sum of 6,000,000 marks demanded by the present minister by appropriating instead 2,000,000 marks for this purpose annually.

The most widely different conditions in this respect are noticeable in the separate provinces. Schleswig-Holstein, the first in order in everything excellent pertaining to schools, approaches nearest to normal conditions, owning 3,660 rooms for 3,670 classes. In this province the number of rooms is about equal to that of the classes. Last in order is Silesia, which has but 8,495 rooms for 12,323 classes. In the rural districts of that province only 6,191 rooms are provided for 9,432 classes; in the district of Breslau, 1,500; in that of Liegnitz 1,100 classes are without apartments of their own. While in Silesia the number of classes increased by 860, only 453 additional rooms were provided; in the rural districts of that province the number of classes increased by 573, that of class rooms by 268.

As far as the formation of classes is concerned Prussia ranks among the countries which do not favor coeducation.

Classes in 1886 and 1891.

	1886.	1891.
Boys' classes.....	10, 096	12, 168
Girls' classes.....	10, 297	12, 281
Mixed classes.....	54, 704	58, 297
Total	75, 097	82, 746

The number of separate classes for boys and girls we see increased 20 per cent; that of mixed classes only by $6\frac{1}{2}$ per cent. In the cities of several provinces the number of mixed classes has decreased according to absolute figures. City and country must be separately considered in this respect. In cities, in 1891, 28 per cent, or only 7,467 out of 26,651 classes, were mixed. The greatest number of mixed classes is to be found in the city schools of Posen (908 out of 1,339, or $68\frac{1}{2}$ per cent). Rhenish Prussia (2,128 out of 4,956, or $42\frac{1}{2}$ per cent) ranks next. The district of Düsseldorf particularly distinguishes itself in this respect (1,764 out of 2,949, or 60 per cent). Third in order comes Westphalia (795 out of 2,063, or 39 per cent). The least number of mixed classes is found in Berlin (29) and in the city schools of Schleswig-Holstein (82). In the rural districts separate classes for the sexes are found to any noteworthy extent only in a few provinces (Rhenish Prussia, Westphalia, Silesia, Brandenburg) possessing a greater number of villages with urban conditions, still the separate classes (5,265) throughout constitute 9.4 per cent of the sum total (56,095), 30 per cent (2,216) in Rhenish Prussia (total 7,417), and 25 per cent (1,139) in Westphalia (total 4,477). There are no separate country schools for the sexes in the governmental district of Bromberg; Cöslin and Marienwerder each has one. Whether there be any advantage in separate instruction for boys and girls may be doubted. Altogether, 1,718,269 out of

2,467,558 boys and 1,691,812 out of 2,448,918 girls are instructed in mixed classes, consequently more than two-thirds of the total number, but only three-tenths in cities.

The grading of pupils has likewise suffered little alteration in Prussian common schools during late years. It moves parallel with the growth of villages. The following table presents a survey of the changes that have taken place:

Grades.	1886.			1891.		
	Schools.	Classes.	School children.	Schools.	Classes.	School children.
One.....	17,744	17,744	1,146,701	16,600	16,600	969,598
Two.....	8,845	18,141	1,078,450	9,474	19,425	1,047,507
Three.....	3,949	12,561	833,013	4,447	14,054	850,383
Four.....	1,352	6,408	449,744	1,553	7,247	476,403
Five.....	649	4,102	285,282	692	4,253	274,413
Six.....	1,187	12,825	829,823	1,551	16,181	994,852
Seven and more.....	290	3,315	215,225	425	4,931	308,221

The change is easily recognizable. The ungraded school is fast losing ground; schools with two to five grades show only insignificant changes, while the schools with six or seven grades are rapidly increasing. In 1882 there were still 20,082 ungraded schools (30.5 per cent) in which 1,336,404 children were instructed. The fewest ungraded schools are found in Silesia and Westphalia; the next in Pomerania and West Prussia; 40 per cent of the common school pupils of the last-mentioned provinces are still instructed in ungraded schools; in the country in East Prussia almost one-half, in Pomerania more than one-half (101,497 of 179,823 children). The two-grade school is found oftentimes in East Prussia and Posen; schools of three grades in Silesia, Hanover, Westphalia, and Hesse-Nassau (20 to 25 per cent of the children); schools of four grades again in Silesia and Westphalia (12 per cent); the five-grade school in Silesia and Saxony (7 to 8 per cent); the six-grade school in Berlin (all schools with one exception), Brandenburg, and Saxony. The seven and higher grade schools alone constitute a large percentage in Hesse-Nassau (17 per cent), in Wiesbaden (25 per cent), followed by Rhenish Prussia (in this case, Düsseldorf with 20 per cent), and Westphalia (10 per cent). The district of Düsseldorf is about to follow the order of the day by replacing the unprofitable, though otherwise preferred, six-grade school by schools of seven and more grades. In the latter the number of pupils increased from 40,600 to 70,199; in the former, the six-grade schools, it decreased from 77,349 to 67,707. Hopes are entertained that the adoption of the same measure in a smaller degree in the districts of Hanover and Osnabrück means the beginning of a reform that will spread over the whole State.

In the rural districts schools of few grades predominate. The following table presents a review. In 1891 there were:

Grades.	Schools.	Classes.	Children.
One	16, 136	16, 136	947, 004
Two	9, 145	18, 740	1, 008, 030
Three	3, 980	12, 401	746, 877
Four	1, 015	4, 472	298, 335
Five	306	1, 711	118, 908
Six	254	2, 258	158, 528
Seven	357	325	23, 258

Aside from the decrease in the number of ungraded schools (1,041), the changes are inconsiderable. Country schools of five or more grades prevail only in Silesia, Brandenburg, Westphalia, and Rhenish Prussia.

Of not less importance than the number of grades is the number of classes in a schoolhouse. We shall confine ourselves to the city schools of six and more grades. The six-grade schools averaged 10.7 classes; the schools of more grades, 11.8. In the various provinces the difference is not considerable, but nevertheless noticeable throughout. For instance, Silesia has fewer schools than Saxony, and Rhenish Prussia fewer than Westphalia. The six-grade schools of Silesia average 9 classes; those of Saxony more than 12; the seven and higher grade schools of both provinces between 11.6 and 17.5. In Westphalia the seven and higher grade systems average 14.6; in Rhenish Prussia only 9.3 classes. In this respect a review of the largest cities is of great interest.

Cities.	Grades in majority of schools.	Schools in the city.	Total classes.	Average of classes.
Königsberg	6	14	182	12.9
Danzig	6	19	204	10.7
Charlottenburg	6	12	140	11.7
Berlin	6	192	3, 206	16.7
Stettin	6	20	227	11.4
Posen	6	6	105	17.5
Breslau	6	104	672	6.5
Görlitz	6	8	121	15.1
Magdeburg	6	41	480	11.7
Halle on the Saale	6	9	226	25.0
Erfurt	4	4	88	22.0
Kiel	7 or 8	16	132	8.3
Altona	6	26	278	10.7
Hanover	7 or 8	20	263	13.2
Osnabrück	7 or 8	8	78	9.8
Münster	6	11	72	6.5
Dortmund	7 or 8	21	240	11.3
Cassel	7 or 8	10	135	13.5
Hannau	7 or 8	2	38	19.0
Wiesbaden	7 or 8	7	130	18.6
Frankfort on the Main	8	18	244	13.6
Crefeld	7 or 8	41	282	6.9
Duisburg	6	24	148	6.2
Essen	6	19	173	9.1
Düsseldorf	7 or 8	26	300	11.5
Elberfeld	6	41	320	7.8
Barmen	7 or 8	41	281	6.9
Cologne	6	61	628	10.3
Aix la-Chapelle	6	24	227	9.5

^a Will very shortly introduce the seven-grade system.

^b Magdeburg has among others 9 ungraded schools, but also 3 seven-grade schools each with 21 classes.

^c Six schools with 127 classes have six grades each, and 2 schools with 94 classes, seven grades.

^d Nine schools with 121 classes have six grades, and 10 schools with 136 classes, seven or eight grades.

^e Two schools with 8 classes in two grades; 3 schools with 15 classes in three grades; 1 school with 8 classes in four grades, 3 schools with 29 classes in five grades; 2 schools with 12 classes in six grades.

^f Eleven schools with 92 classes have six grades, and 5 schools with 70 classes, seven grades.

^g Sixteen schools with 101 classes have six grades; 17 schools with 147 classes, seven grades.

As it is to the interest of education for schools to be as small as possible, consequently that the number of classes should not exceed if possible the number of grades, it is an encouraging fact that in six-grade schools the average of classes has fallen from 10.8 to 10.5. Correspondingly the number of classes in schools of seven and more grades has increased from 11.4 to 11.6.

In Prussia, during the last few years, thousands of schools have arisen in which the number of classes is larger than that of the teachers. Until 1878 there were very few of these schools. In 1878 there were 57,165 teachers' positions for 57,780 classes; consequently only 615 classes were unprovided for. From that time on conditions in this respect have become worse. There existed in—

	1882.	1886.	1891.
Classes	65,968	75,097	82,746
Teachers	59,917	64,750	70,094
Deficit in the number of teachers	6,051	10,347	12,652
Proportion of teachers to classes	0.91	0.81	0.80

This statement shows that in 1886 there were no teachers for 10,347; in 1891, none for 12,652 classes; or, that in 1886, 20,694, and in 1891, 25,304 classes shared teachers with other classes. Substitutes and assistants, it is true, are not included in the total number of teachers (1886, 1,183; 1891, 1,657); but, on the other hand, neither are unfilled or not regularly filled positions deducted (1886, 467; 1891, 1,020). In every case a decided retrogression has taken place, which is particularly manifested in the arrangement of two-grade schools with one teacher (1882, 2,989; 1886, 5,481; 1891, 5,925), and three-grade schools with only two teachers (1882, 1,847; 1886, 2,610; 1891, 3,136).

In view of this fact, the diminution of overcrowded classes means little. A stroke of the pen can change an ungraded into a school of two grades with one teacher, or a two-grade school with two teachers into a three-grade school; neither money nor teachers are required, since these teachers have to work additional time. Improvements thus accomplished are not real. The statements concerning normal and abnormal class attendance have therefore little value. The only true standard is, "Have the numerical relations between teachers and pupils improved or not?" The following statement gives the answer:

	1882.	1886.	1891.
Number of children	4,339,720	4,838,247	4,916,476
Number of teachers	59,917	64,750	70,094
Pupils to every teacher	72.4	75	70

How easily the apparent improvement was effected has been seen, and is evident from the above figures. The improvement has influenced the whole State, even if in very unequal degrees, but has not yet brought about satisfactory conditions.

The following table indicates the most progressive and the most backward districts.

To one teacher the number of pupils was as follows:

	City schools.				Country schools.		
	1882.	1886.	1891.		1882.	1886.	1891.
Gumbinnen	49	66	51	Stralsund	55	56	53
Stralsund	49	53	52	Schleswig	56	56	54
Stettin	55	56	52	Lüneburg	56	59	56
Cöslin	59	58	53	Stade	60	61	59
Lüneburg	56	62	54	Cöslin	67	70	64
Osnabrück	70	82	68	Breslau	94	95	a 83
Trier	68	72	68	Oppeln	102	98	a 84
Düsseldorf	72	75	70	Minden	99	97	80
Oppeln	72	75	70	Münster	85	92	90
Arnsberg	80	79	74	Posen	106	110	b 95
Münster	83	87	85				

a The conspicuous improvement in this case was due to the appointment of assistants: Oppeln, 575; Breslau, 365.

b The conditions of the city schools in the district of Posen were more favorable (1882, 73; 1886, 74; 1891, 63).

The latest statistics contain numbers that, unfortunately, do not show the numerical relation of teachers to scholars in any better light than the averages. The average numbers of certain districts are very high. The Catholic rural schools in the district of Posen are examples, as follows:

District.	Teachers.	Classes.	Pupils.	Pupils to every teacher.
Wreschen	38	72	4,290	111
Jarotschin	51	89	5,608	110
Schroda	59	83	6,493	110
Schrimm	49	90	5,639	113
East Posen	28	46	3,008	107
West Posen	40	83	5,452	136
Samter	48	83	5,717	119
Birnbaum	16	28	1,889	118
Newtowischel	23	42	2,939	119
Gratz	28	52	3,565	127
Bomst	51	91	5,788	114
Schmiegel	46	78	5,286	115
Kosten	48	93	6,472	135
Rawitsch	33	54	3,752	114
Gostyn	46	82	5,409	118
Koschmin	29	50	3,563	123
Krotoschin	31	61	3,805	123
Schildberg	33	48	3,308	100
Kempen	42	76	4,225	101

As there are small schools, too, in the districts, a deduction from these numbers is easily made, the foregoing figures being from a district that does not rank unfavorably.

The Handbook for School Inspectors, Clergymen, and Teachers, of the years 1891 and 1892, for the governmental district of Merseburg, states:

Of the 1,048 schools with one or two teachers, 226 villages have 80 to 120 pupils to one teacher; 55 villages have over 120 pupils to one teacher, and 188 each two teachers to more than 120 pupils. To bring these schools to the normal condition designated in the general regulations, i. e., one teacher for every 80 children, the government must appoint 524 additional teachers. This number is wanting alone in schools of one and two grades in a single governmental district. In all the other schools, hence in the cities of that district, there exists the same reptition. For instance, 3 schools, each with one teacher, have 197, 194, and 193 children respectively. Oftentimes one teacher has over 150 or 160 children in charge. In 8 schools two teachers instruct 250 and more pupils; in another place 288 children are taught by two teachers.

After the above statement, even a moderate equipment of teachers can not be accepted as an unconditional proof of the satisfactory condition of the schools. The question is: How many teachers are there for the number of classes? The overcrowding of many classes, combined with the lack of teachers, will emphasize present unsatisfactory conditions. Of the 4,916,476 common school pupils 1,661,182 children were members of overcrowded classes. A class is considered overcrowded according to the existing law when it numbers more than 80 in an ungraded school, and more than 70 pupils in a school of two or more grades. Not less than 1,309,175 children sat in classes numbering from 81 to 100, or 71 to 90 pupils respectively; 324,821 children sat in classes of 101 to 150, or 91 to 120 pupils respectively, and 27,186 children in classes of more than 150 or 120 pupils respectively. In the face of such circumstances it is easily understood why the minister of public instruction should say that the school administration could not guarantee the maintaining of the present educational standard of the people. "It is true," he said, "that it was worse in former times; but then Prussia was justly called the 'land of schools,' for it stood at the head; to-day, however, we are behind countries whose schools are very much younger than ours; for instance, France, where every 40 to 50 children have a teacher."

The most backward governmental district in this respect is Münster. Only 21,462 or 23.01 per cent of the 93,264 school children were members of classes having the normal number. Fully 71,802 children (76.99 per cent), or seven-ninths of the total number, were in classes with more than 70 to 80 children. The next districts, Arnsherg with 35.78 per cent, Düsseldorf with 39.86 per cent, Oppeln with 43.64 per cent, classes of normal capacity, are as far ahead of Münster as they themselves are below the average (66.21 per cent). The above numbers do not give entire evidence of the conditions of the district of Münster. In its cities only 10.08 per cent of the children are seated in classes not crowded. Münster, however, is entitled to the credit of levying the minimum of school taxes. In 1891 throughout the State these taxes amounted to 4.89 marks per head of the population.¹ Münster man-

¹ A mark is equal to 23.8 cents.

ages its schools with 3.60 marks, in the country with 3.41 marks; while Oppeln expends 3.68 and Königsberg 3.75 marks; the neighboring districts of Arnsberg raise 6.06; Minden, 4.71; Düsseldorf, 5.69; Cologne, 6.35; and even the poor district of Cöslin, 4.75 marks.

The average requisite amount throughout the State for the schooling of a child is 29.74 marks (in the country 24.73 marks). Münster again makes the most moderate demands; it maintains its schools with 20.70 marks. In the cities of the governmental district of Münster, above all in the city of Münster itself, education is particularly cheap. They expend 24.43 marks for each child, while the State average in cities amounts to 39.99 marks, and even East Prussia requires more than 32 marks. In the last thirty years (since 1864) the expenses of a common school pupil average an increase of about 17 to 18 marks—the exact amount can not be obtained. Again Münster is last in order with 12.88 marks.

School attendance in the larger cities is of special interest. It is, to some extent, characteristic of the school system, since, as a rule, in cities there is one teacher for every class who keeps the register of attendance. The following table is a summary of 28 of the largest cities of Prussia:

City.	School children.		Classes.		Average class attendance.	
	1886.	1891.	1886.	1891.	1886.	1891.
Königsberg.....	15,061	11,391	227	182	66	63
Danzig.....	11,562	12,289	187	204	62	60
Charlottenburg.....	4,045	7,115	62	140	65	51
Frankfort on the Oder.....	5,610	4,929	101	94	56	52
Stettin.....	9,929	11,109	203	227	49	49
Posen.....	6,305	5,725	99	105	63	55
Breslau.....	37,118	39,260	579	672	64	58
Liegnitz.....	5,298	5,217	83	84	64	62
Magdeburg.....	20,706	26,580	344	480	60	55
Halle.....	10,137	13,006	171	226	59	57
Erfurt.....	7,483	5,150	126	88	59	58
Altona.....	16,003	18,614	237	278	71	67
Kiel.....	7,467	7,280	133	132	56	55
Hanover.....	14,276	15,898	216	263	66	60
Münster.....	5,257	5,899	62	72	85	82
Dortmund.....	14,825	16,286	205	240	72	68
Bochum.....	9,232	9,854	115	127	81	76
Cassel.....	7,530	7,251	136	135	55	54
Frankfort on the Main.....	12,040	12,902	219	244	55	53
Crefeld.....	15,478	17,854	225	282	69	63
Duisburg.....	9,309	10,320	127	148	72	67
Essen.....	11,748	12,941	154	173	76	75
Düsseldorf.....	16,790	20,312	241	300	70	68
Elberfeld.....	17,791	19,570	266	320	67	61
Barmen.....	18,486	18,926	249	283	74	67
Cologne.....	21,117	39,433	346	628	61	63
Aix-la-Chapelle.....	13,299	13,944	181	227	73	61
Berlin.....	151,130	175,620	2,725	3,206	55	55

Among all these cities we see that Stettin shows the best conditions; but still a rather large attendance in the lower classes is easily reckoned from its average of 49. In Stettin the law does not allow over 60 pupils in a class; hence the class rooms are certainly not empty in this city either. It follows that Münster is last in order, with Bochum next above.

We must pass, with only few suggestions, over other extremely interesting conditions, illustrated by statistics. The number of boys in common schools (2,467,558) is very little greater than that of girls (2,448,918), because a greater number of school boys are instructed in other educational institutions. In cities (803,182 boys and 810,276 girls), particularly in Berlin, the "City of Intelligence" (86,544 boys and 89,076 girls), girls are in the majority, despite the fact that 1,000 births average from 512 to 515 male children. One thousand five hundred and forty-eight more boys than girls were born in the year 1891 alone (averaging in the whole State 33,000 to 36,000 more). In former years the number of female pupils was still lower than that of male pupils (in 1822 about 60,000), because with girls obligatory attendance was less strictly enforced than with boys. At present, there is hardly a perceptible difference resulting from the law, with the exception of Schleswig-Holstein, where boys are required to attend school one year longer than girls. The influence of this regulation is particularly noticeable in the rural districts of that province (73,090 boys; 64,804 girls).

The Catholic has more children on an average than the Protestant population, and a larger percentage of Catholic children attend common schools. The intensely interesting figures are here omitted, as their interest is almost purely theoretical. If, in consequence of the greater number of children, Catholic communities should be more heavily taxed, measures of equalization are adopted by the State when ever possible. Since 1887 permission of the governmental district authorities is indispensable for the adoption of such measures, and these men are not always of opinion that improved education is a benefit. The two denominations do not always show an equal readiness to make sacrifices for educational purposes.

Older statistical reports on Prussian common schools classify educational data more according to the denominations than do the present; for instance, in regard to salaries. These figures deserve to be wrested from oblivion. The average amount of teachers' salaries in 1861 was as follows:

[Considering the greater purchasing power of a thaler in Germany, it may safely be taken as at par with our dollar, though it is worth only 72 cents in gold.]

District.	City.		Country.	
	Protes- tant.	Catholic.	Protes- tant.	Catholic.
	<i>Thalers.</i>	<i>Thalers.</i>	<i>Thalers.</i>	<i>Thalers.</i>
Königsberg.....	267	166	144	150
Gumbinnen.....	274	245	161	.....
Danzig.....	347	256	205	181
Marionwerder.....	281	204	163	154
Posen.....	253	209	145	100
Bromberg.....	243	198	115	138
Berlin.....	464	241	.....	.....
Potsdam.....	284	207	199	.....
Frankfort on the Oder.....	262	232	212	210
Stettin.....	272	253	163	100
Cöslin.....	242	152	115	97
Stralsund.....	306	288	177	.....
Breslau.....	311	259	198	149
Oppeln.....	263	224	170	148
Liegnitz.....	310	273	228	162
Magdeburg.....	291	242	221	253
Merseburg.....	288	215	272	.....
Erfurt.....	265	191	189	157
Cologne.....	321	301	257	210
Düsseldorf.....	374	292	268	238
Coblenz.....	257	248	169	109
Trier.....	296	222	198	176
Aix-la-Chapelle.....	383	258	229	187
Münster.....	263	254	168	166
Minden.....	323	210	227	179
Arnsberg.....	342	241	219	169

These references go to show that Catholic teachers were on an average paid less than Protestant.¹

The numerical relation between teachers and pupils was formerly and is to-day less favorable among Catholics. A change has been effected since the influence of the church has been restricted from the beginning of the era inaugurated by Minister Falk. From 1871 to 1886 the number of Catholic teachers increased 34.56 per cent, or in greater proportion than the number of pupils; the number of Protestant teachers increased 25.24 per cent, corresponding with the moderate increase in the number of pupils. And still a difference prevailed in 1886, when there were 82 pupils to every Catholic and 71 to every Protestant teacher. The number of pupils to the class in Catholic schools averaged 71, in Protestant schools 61 children.²

¹ In communities where school societies still exist these inequalities are found oftener. A specimen compilation of these instances would not be inopportune.

² The Polish nationality and the policy of the school authorities were each in part responsible for the fact that in Prussia in 1871 6.6 per cent of Protestant and 15.16 per cent of Catholic men, and 11.37 per cent of Protestant and 21.81 per cent of Catholic women, were illiterate.

Since 1886 the difference has increased; Protestant schools have made more rapid progress; Catholic schools have either followed at a slower rate or remained at a standstill; the State has no control over these conditions.

In 1891 Protestant schools numbered 3,050,864 pupils; Catholic schools, 1,635,779 pupils. The two denominations, therefore, show a ratio of 13 to 7. Consequently, if both were equally progressive, there should be a little over 1 Catholic school, class, etc., to 2 Protestant. The following figures show the real facts. The increase in city and country combined was as follows:

	Protestant.	Catholic.
Schools	615	93
Teachers	4,712	1,915
Classes	4,741	2,536

Proportionately, very few additional Catholic schools and teachers' positions were established. While just as many teachers' positions were created for the 4,741 new classes of Protestant schools, 611 additional classes were opened in Catholic schools without the new appointment of a single teacher. Protestant and Catholic schools increased, respectively, 2.13 and 0.92 per cent; teachers, 11.42 and 9.75 per cent; the number of classes, on the other hand, 9.81 and 11.14 per cent. In Protestant schools there are 66 pupils to every teacher; in Catholic schools the proportion is 69 to 1; in cities alone, 59 to 1 Protestant, and 69 to 1 Catholic; in the country, 69 to 1 Protestant, and 79 to 1 Catholic. The differences are still greater in the various provinces. In the district of Münster there are 65 pupils to every teacher in Protestant, and 90 in Catholic schools. Under the late school laws the Protestant schools of the district increased their number of teachers 13.2 per cent; the Catholic schools, 9.8 per cent. Similar figures are derived from nearly all the other governmental districts. Proportions found in the Polish districts can not be accepted unconditionally. Only a few facts may be quoted. In the Protestant and Catholic schools of the district of Posen there is 1 teacher to 65 Protestant and 103 Catholic pupils; in cities the proportions are 1 to 60 and 1 to 77; in the country, 1 to 67 in Protestant, and 1 to 110 in Catholic schools. Official statistics of 1891, among other things, present a special list of classes with extraordinarily large attendance, i. e., more than 150 children to a class in ungraded schools, and more than 120 to a class in schools of two or more grades. Of these, 67 are Protestant, 98 Catholic, and 9 mixed schools. Posen has 26 Catholic and no Protestant schools; Silesia has 3 Protestant and 39 Catholic; Westphalia, 10 Protestant and 18 Catholic, of which 2 and 14, respectively, are in the district of Münster; Rhonish Prussia, 2 Protestant and 13 Catholic. Of the larger Prussian cities, as already stated, Münster and Bochum have the poorest equipped

schools; in the city of Münster there are 88 children to every Catholic and 66 to every Protestant common school teacher.

It is cruel irony on the "wounding of nonsectarianism," perpetually deplored, to say that an improvement of schools was made possible only by the intervention of State governmental power, and that their retrogression began with the investment of the power to command in communities and district boards.

To give a clearer view of the position of both creeds in respect to education, we must include those branches of our public school system that are not so completely subject to State authority as elementary common schools, i. e., intermediate or middle schools. Neither must we forget in this case that the proportion of both creeds in Prussia is 13 to 7; consequently an equal development must show figures on the Catholic side a little over half of those on the Protestant. The following figures indicate the results:

	Pupils.	
	Protestant.	Catholic.
Public intermediate schools for boys.....	32, 420	3, 727
Public higher schools for girls.....	35, 114	3, 819
Public intermediate schools for girls.....	25, 354	1, 976
Other public intermediate schools.....	17, 818	1, 432
Private intermediate schools for boys.....	7, 031	2, 740
Private higher and intermediate schools for girls.....	39, 324	12, 517
Other private intermediate schools.....	2, 771	178
Total of intermediate schools.....	159, 832	26, 099

These numbers indicate the readiness of Catholic and Protestant communities to make sacrifices for educational purposes, as State authority here ceases and private liberality has full scope for action. The author does not incline toward overrating intermediate schools; many of them could be spared, he thinks, for they only serve caste prejudices. If common schools were better provided for in places where intermediate schools do not exist, the foregoing figures might be considered favorable to the Catholics, but deductions prove a reverse of conditions.

The proportion of nationalities represented by the pupils of common schools is particularly interesting. The language spoken in the families of the 4,916,476 children is German only in 4,268,909, Polish only in 491,142, Polish and German in 76,298, and Danish in 22,735 cases. The others are divided among the nationalities of smaller representation. Official statistics attest for the whole State a small increase of from 86.58 to 86.83 per cent of German-speaking children. However, the case is reversed in the decisive positions of the contending nationalities.

In the province of Posen the German nationality has retrograded during the last five years instead of progressing. In many districts the number of German-speaking children has considerably decreased, while the Polish have increased. The case is reversed in only few districts; as, for instance, in the district of Rawitsch, in which the

number of German-speaking children has increased by 627 (in 1886 by 1,812; in 1891 by 2,439); the number of Polish-speaking children has remained stationary (between 685 and 678). Those speaking both Polish and German have likewise increased in number. A similar state of affairs exists in the cities of the districts of Colmar in Posen and in the county of Bromberg. In the latter the number of German-speaking children rose from 699 to 1,113, while the number of others changed but little. In many districts the number of children of both nationalities decreased, but to a greater extent among the Germans than among the Poles. The relations of the city of Posen are particularly conspicuous; the number of German speaking children fell from 2,257 to 1,647; the number of Polish slightly increased (from 3,543 in 1886 to 3,653 in 1891), and the number of those speaking both German and Polish slightly decreased (between 505 and 425). Consequently in every case there is a loss of the German nationality. It is a conspicuous fact that the retrogression of the German element is much the strongest in cities of Posen. In the cities of the district of Wreschen the number of German-speaking common school pupils decreased to less than half (1886, 755; 1891, 337), while the Polish increased in the same proportion (between 592 and 1,035). The following figures refer to the whole governmental district of Posen. The number of German-speaking children decreased by more than 3,000, from 61,760 to 58,561; the number of Polish diminished by 500 (in 1886, 134,573; in 1891, 133,885); the number of those speaking German and Polish remained almost the same (between 7,628 and 7,728). In the district of Bromberg the number of those speaking German decreased about 1,800 (from 51,613 to 49,849); those speaking Polish about 600 (from 53,013 to 52,461); those speaking both German and Polish likewise about 600. The percentage of the retrogression of the German nationality is apparently large throughout.

It is apparent that in this case there is no question of momentary displacements, explained by certain spontaneous actions. Evidently more Germans than Poles have emigrated. The numbers of common schools alone give no absolute standard for the relations of school children and population, as higher and intermediate schools are proportionately more largely attended by Germans than by Poles. In Upper Silesia, too, the number of Polish-speaking children has greatly increased. In 1886 there were no Polish pupils in the city schools of the districts of Ratibor and Leobschütz; in 1891 there was quite a considerable number. In the rural districts of the district of Kreuzburg there was a decided increase of Poles. In the entire district of Oppeln the number of German-speaking children diminished by more than 4,000, while the Polish increased by 3,500, as was also the case with the number of those speaking both German and Polish. In Upper Silesia, also, the displacement is strong. Conditions in West Prussia have remained about the same. Displacement in individual instances

are less important, and have not all taken place with a disadvantage to Germans. In the remaining provinces the scattered population not German shows a greater or less diminution, as, for instance, on the Danish frontier. Most undoubtedly in cases where the greatest stress is laid upon Germanization, progress compared with retrogression sinks into insignificance.

In conclusion, the expenditures incurred by Prussian common schools may be mentioned.

	Marks.
Salaries and pensions amounted to	92, 716, 500
They include:	
Fixed salaries	74, 735, 602
Increase for age or premiums for meritorious service	8, 431, 975
Pensions	5, 969, 185
The remainder is spent for minor purposes.	
The incidental expenditures, including school buildings, amounted to..	53, 508, 812
Total.....	146, 225, 312
Or, \$34,801,624.25.	

A question of special interest is, In what proportions do State and community meet these demands? The State contributes only a small amount (2,000,000 marks) to the expenditures for buildings. Since the enactment of the school-tax law it defrays a large part of the expenses for salaries.

Forty-one per cent, or 31,750,000 of the 74,736,000 marks, which the teachers draw for salaries are paid out of the State treasury, namely, 5,835,000 marks allowances for rent and 25,549,000 marks from the State school tax. Communities, landed proprietors and societies, that is, those obliged to support schools, contribute 32,500,000 marks, or 42 per cent. The sum of 1,379,000 marks was raised by tuition fees; school funds and endowments yielded 6,544,000; churches, etc., contributed 2,476,000 marks. Besides, the State pays male and female teachers 8,432,000 marks for increased salaries on account of age and meritorious service. The relations are very dissimilar in cities and the country. While in cities the State contributes only 27½ per cent, or 9,215,000 marks, toward salaries, and 1,651,000 marks for increase of salaries on account of age, only 22,295,000 marks, or 66½ per cent, remain to be paid by communities and other local authorities. In the rural districts the State pays much more than half the amount of salaries, namely, 22,544,000 marks, or 55 per cent, and besides this 6,781,000 marks for increased salaries on account of age. There remained only 10,281,000 marks, or 25 per cent, to be paid by the local authorities. In the year 1885 the sum of 35,291,000 marks toward teachers' salaries had to be raised for rural schools, besides 6,136,000 marks for tuition fees, which item had dwindled in 1891 to 346,000 marks. The decrease in the communal burden amounts to about 19,000,000 marks in round numbers. The lowest amounts from communities, great land owners and societies are collected in East Prussia; next in order come Pomerania and the districts of

Erfurt, Hildesheim, and Cassel. The following figures show what small amounts are collected in many rural communities: In the district of Ortelsburg 169 teachers receive salaries amounting to 127,000 marks; the rural communities in the district of Pillkallen pay 2,162 marks (80,000 marks are necessary for 106 teachers); Darkelmen pays 1,668 marks (61,000 marks for 79 teachers are required); Goldap, 1,461 (86,000 marks for 112 teachers); Oletzko, 1,860 (83,000 for 106 teachers); Lyck, 2,163 (93,000 for 117 teachers); Lötzen 722 (71,000 for 94 teachers); Sensburg, 868 (83,000 for 108 teachers). We see that in these districts of East Prussia the teachers' salaries are paid almost entirely by the State. Similar conditions exist in most of the Pomeranian country communities. The district of Demmin contributes 2,596 marks (88,000 marks are requisite for 105 teachers); Anklam, 525 (51,000 for 61 teachers); Pyritz, 1,377 (82,000 for 97 teachers); Naugard, 1,458 (87,000 for 105 teachers); Greifenberg, 966 (67,000 for 85 teachers); Regenwald, 568 (80,000 for 98 teachers); Belgrad, 2,319 (75,000 for 97 teachers); Rummelsburg, 1,008; Bublitz, 878; Bütow, 501; Lauenburg, 1,527. Similar and somewhat higher numbers are indicative of the conditions in the provinces of Saxony, Hanover and Hesse-Nassau. The western provinces show quite favorable results from country communities also.

The following figures show how much communities in the country and landed proprietors owe to the relief afforded by the school law of 1888, not to mention the cessation of tuition fees. Country communities contributed in 1885 to teachers' salaries in the district of Königsberg 867,000 marks; in 1891 only 128,000; in Gumbinnen, during 1885, 613,000, but in 1891 only 44,000; in Danzig, in 1885, 392,000, but in 1891 only 92,000; in Marienwerder, in 1885, 622,000, but in 1891 only 144,000; in Stettin, in 1885, 172,000, in 1891 only 43,000; in Cöslin, in 1885, 206,000, but only 52,000 in 1891; in Stralsund, in 1885, 141,000, but in 1891 only 18,000; in Posen, in 1885, 602,000, but in 1891 only 176,000; in Bromberg, in 1885, 304,000, but in 1891 only 55,000. The equalization of expenditures in cities caused by the law referred to can hardly be compared with the foregoing figures. In most districts the expenditures of cities for teachers' salaries have increased, despite State appropriations, and only in few cases in proportion to the increase of population. In 1885 cities expended altogether for teachers' salaries 21,003,000 marks; in 1891, 22,295,000.

The sums paid for common schools are considerable. Official statisticians calculate an average of 29.74 marks, or \$7.08, for every child. The accuracy of this calculation may be doubted. However, let us take for granted that the figures are approximately correct. Secondary educational institutions, with only 150,000 students, cost 31,500,000 marks, of which 14,500,000 are raised by tuition fees, so that each pupil still requires 113 marks (\$26.89) additional. The Prussian universities, for about 12,000 students, require 7,500,000 marks State appropriation, an average of 625 marks (\$148.75) per head. In comparison the demands

of elementary common schools are modest. Even the schools dearest to the people, the intermediate, are far more expensive than the elementary. Each one of their pupils costs 91 marks (\$21.66), or about 50 marks after deduction of tuition fees.

The improvement of the common schools is, and ever will be, a question of finances. This the managers and councilors of the State administration know very well. The old adage is frequently quoted,

Money which on schools is spent
Brings in the highest rate per cent.

PART II.—THE COMMON-SCHOOL TEACHERS OF PRUSSIA.

This is intended to be a presentation of comparative statistics relative to the position of Prussian common school teachers, women included.

It is the custom of our time to deal with subjects impersonally. A "government" is praised or condemned when only an individual or several officials are meant. We speak of the "church" when we mean the clergy, and of the "school" when the question refers to teachers alone. This manner of expression is as just on the one hand as it appears open to objection on the other. By identifying officers with the institution whose representatives they are, the intention evidently is to characterize their full importance; a more significant background is thereby given to matters pertaining to them personally. On the other hand, we express ourselves impersonally when we do not desire to elevate the institution concerned. Knowing, however, that the institution in itself is a phantom, that it is and becomes something only through the persons connected with it, we speak most frigidly about its significance, but when occasion offers give the persons concerned with it a rebuff. Many speeches and publications overflowing with good will for the "school" manifest this temper. The present Prussian minister of education, Dr. Bosse, strongly emphasized the insufficiency of the teachers' salaries, and assisted the "school reformers" in city councils by telling them very distinctly and in plain language where and what the real force of the public system of instruction is. When he submitted his bill on the "Improvement of common schools and salaries of teachers, male and female" (the title was sufficiently expressive of the minister's meaning), he spoke as follows in his introductory speech, January 10, 1893:

The Royal Government has arrived at the conviction that a systematic gradation and a proportionate regulation and fixedness of the salaries of common school teachers, especially the increase just necessary for teachers in the poorer districts, is altogether impossible under the provisions of the law of May 26, 1887. It recognizes more and more in this law—I am speaking advisedly—the danger of a standstill and the decay of a uniform development, not only of the system of compensation, but of our entire public school system. * * * I shall confine myself only to the general conclusion that the law of May 26, 1887, leads, and must lead, to consequences which neither the Royal Government nor the Diet foresaw, or could have foreseen; to consequences which most seriously imperil the Prussian school system throughout.

When Deputy Rickert demanded energetic efforts in behalf of the instruction in domestic economy, Dr. Bosse replied that he must first procure "daily bread" for the schools. He doubtless used the term in a different sense from the one applied above. Soon afterwards this debate was most forcibly exemplified. The city of Elbing, which has 59 teachers (among them 8 women) for 5,021 children, and pays most meager salaries, wanted to establish a school of domestic economy after the model at Marienburg. The minister refused his sanction, to the satisfaction of all true friends of education.

A great deal of insincerity attaches to efforts in behalf of schools, efforts that appear to teachers like the cat going around the hot broth in the tale of old. That is the one reason why teachers as a body oppose many "reforms" often more directly than by mere criticism. Yet teachers should be identified with current movements. In the midst of the stream they can always keep up with the current. They can also, if necessary, build a dam and turn aside the stream into a direction in which it will spread greater blessing. Some educational journals in Germany believe even now that they may and must ridicule reforms like instruction in domestic economy and manual training. They mean to reclaim the school for "general" education in Pestalozzi's name. Pestalozzi, however, united, as is known, his educational system most intimately with practical, useful work—spinning cotton. Outside reformers are often better disciples of Pestalozzi than their antagonists. For this reason it is no cause for surprise to hear that teachers with such views meet with strong opposition from the public, who judge the teacher's attitude in the same way in which the resistance of many ecclesiastics to religious reforms is judged. Teachers must not decline but accept what is of value, and admit what is new with the greatest generosity, and expose the shortcomings of what should have been accomplished. Otherwise they refute idealists without convincing materialists. Both are led to an unhealthy fellowship instead of soliciting the aid of the former, so that with their help they may take possession of more defensible positions.

"Impersonal" school advocates can not be told too often that their endeavors are unnecessary labor, if not dissimulation. "The teacher constitutes the school." Undoubtedly this is an aphorism, but aphorisms prove nothing. They are correct only if we add a long series of presuppositions, restrictions, and explanations, a condition which, of course, does not apply to imperative demands arising in public. Consequently public discussion becomes proverbial wisdom that is only half true and detrimental when an enrichment of general ideas, but not when a distinct action is aimed at, which is possible only by means of an agreement of a few well-instructed persons. Then there are catchwords which, when rightly used, strike like lightning. Such a one is the old phrase: "The teacher is the school." Most assuredly. The teacher in great measure truly makes the school. Where is there

an excellent school without a teacher professionally inspired? There is none. Professional zeal, fidelity to the duty of vocation, and pedagogical tact, can partly overcome existing miserable conditions; whereas the most excellent external conditions can in no single part replace the missing good teacher. This fact is fully appreciated by the chief Prussian school authorities, as has been already mentioned. The minister of education, Dr. Bosse, has not only repeated and expressed in warmest terms how highly he estimates the personality of the teacher, but has also pointed to the sad circumstances that handicap the educator in the exercise of his official duties.

Undoubtedly every man, hence also every teacher, is in a great measure himself responsible for the part he takes in professional or in civil life. In educational work, much or little can be made out of natural powers. Self-discipline, self-stimulation, self-education, and self-restraint do much to cover many outward deficiencies. But, with the majority, these stimuli soon decline, if legislation and administration of education do not do what they are bound to do to create an excellent universally well-equipped corps of teachers.

The efficient teacher can not be conjured up by magic like a *Deus ex machina*; when considered from purely personal individual worth, he is a product of all the influences brought to bear upon him during his youth at home and at school, during the time of his professional development and during his professional life. Excellent teachers are neither instantaneously created by bureaucratic mandate, nor are they brought forth by more or less seasonable effusions on the virtues of a teacher; but they are the result of long, continuous solicitude and provident care; a fruit maturing only long after the sowing. What Dinter long ago affirmed of the school question is true even now. Higher education for the teacher, better salaries and professional supervision are vital questions to-day more than ever before. Meanwhile in the political life of modern time are added full political freedom and a position of the professional body unobstructed by exceptional laws, i. e., in school administration, provisory care of schools, as well as in civil life.

In many respects we must consider the personnel of the teaching force in our solicitude for education. It may be of much greater importance to a school from what kind of a family the teacher comes, what kind of a wife he has, how he educates or rather can educate his own children, how his family dresses, keeps house and recreates, and what social position he and his family occupy than how the schoolroom is furnished, the schoolhouse built, the system of heating is arranged, etc. Conclusively, in everything the man as such makes the things, and excellence can be accomplished by excellent men only.

The statistics which furnish the material for the following showing can suggest nothing concerning the internal momenta of the teacher's personality. They necessarily deal with outward facts. But in this connection reference will be made beyond bare numerical material to causes and effects that can not be expressed in figures.

Individuals and professionals are not unjustly judged according to their family connection. Oftentimes unconsciously a value is set upon education at home, against which we certainly can advance no objections. It is evident that consideration is thus given to caste; but even such unpleasant things as family pride and class prejudice are partly justifiable.

What is the parentage of teachers in Prussia?

It is an old prejudice designedly nurtured by true friends that male teachers are recruited from the lower classes, and in this respect are not on a level with female teachers. This opinion has already become so firmly rooted that even teachers themselves express it in good faith, though not always opportunely and to the benefit of the cause. Statistics,¹ in so far as they refer to the personal and private relations of teachers require a different view of the case.

The official statements concerning the parentage of teachers generally distinguish 6 main groups: (A) Agriculture, cattle raising, foresters, and hunters; (B) mining, civil engineering; (C) commerce and transit; (D) domestic service; (E) imperial and State service, etc., and liberal professions; (F) without any profession or specified pursuit. Of these groups D and F need not be considered at all. Out of 62,272 male teachers they averaged between 202 and 854, and out of 8,439 female teachers, between 11 and 203. The remaining 4 groups are separated into 28 subdivisions, further distinguished by: (a) Independents, including business managers and superintendents; (b) auditors, commissioners, and supervisors; and (c) assistants and "hands." An attempt at social definition, we see, enters into very minute details.

The following statement is a general result. The 62,272 male and 8,439 female teachers are descended as follows:

	Male.	Female.
A. Agriculture, cattle raising, hunting.....	21,387	1,314
B. Mining, civil engineering, and industry.....	17,758	2,061
C. Commerce and transit.....	5,040	1,550
D. Court and state service and liberal professions.....	16,031	2,710

These numbers prove the already well-established fact that the majority—more than one-third—of common school teachers belong to the peasantry or agricultural class. In former times this was even more generally the case. Villages with small and moderately large farms were the best recruiting grounds of preparatory institutions; lately, however, they have proved less available. Railroads have brought cities closer together, and thereby opened to the peasant's son the gymnasium on the one hand and commerce and industries on the other. Military service, too, at present, engages a comparatively

¹ The authority for the following statements are "Prussian Statistics, vol. 120; The Common School System of Prussia in 1891; Berlin, 1893."—Imperial Bureau of Statistics.

large proportion of the surplus peasant population. In consequence the authorities fail in their purpose of trying to draw from the villages boys for normal education. A preponderance of the peasant element among teachers does the school no harm, for generally only gifted members of peasants' families adopt this profession. The most excellent acquisitions are received from the agricultural classes, as also undoubtedly many impractical idealists who with difficulty find their right places in the world. Later, when they understand that the recruiting officers, in which capacity ecclesiastics and preparatory instructors specially officiate, have not sufficiently enlightened them on the important point of material success, and on the civil and professional position of teachers, their pleasure in life and vocation is not increased. In Eastern Prussia female teachers seldom come from rural districts, in western Prussia more frequently; on the whole, there are only half as many women as men teachers. Among both sexes recruits belong to independent agricultural families; 86.5 per cent of 18,840 male, and 89.3 per cent of 1,173 female teachers. The fathers of 1,399 male and 105 female teachers were classed among auditors, commissioners, and supervisors; those of 1,548 male and 36 female teachers, among assistants and "hands" in agriculture.

The second strongest group are mechanics, represented by 28.5 per cent men and 31.4 per cent women teachers. It may be here remarked that the industries of clothing and cleaning (tailors, shoemakers, etc.) proportionately furnish the most teachers (4,034 men and 401 women); next to them are builders (2,372 men and 414 women).

Commerce furnishes more female (18.4 per cent) than male teachers (9 per cent); 2,234 male and 808 female teachers belonged to families of merchants and commercial agents. Hotel proprietors and tavern keepers furnished 1,745 male and 171 female teachers.

In these groups, men as well as women teachers are not at all conspicuous among the lower strata of the respective occupations, as the following statement shows:

	Male.		Female.	
	Number.	Per cent.	Number.	Per cent.
(a) Independent persons.....	37,624	80.4	4,374	51.9
(b) Auditors, commissioners, and supervisors.....	3,378	5.4	744	8.8
(c) Clerks and assistants.....	3,183	5.0	417	5.0

Hence it may be said that in so far as the agricultural and industrial classes augment the number of teachers, they offer recruits from social strata which enjoy satisfactory material existence. From this point of view the friends of the teaching profession can hardly, as has been repeatedly done, raise any objection to equitable demands on the part of the teachers. In so far, these statistics have great and practical value.

That the lower strata of officeholders, from which 25.7 per cent men and 32.1 per cent women teachers come, likewise furnish only a proportionately small number of teachers, can be found just as satisfactorily from statistics. The classes specified by (*a*) independents, supplied 13,912 male and 1,878 female teachers; those by (*b*), auditors, commissioners, and supervisors, being 1,629 and 730; those by (*c*), clerks and assistants, being only 490 and 102. Still, these numbers prove little respecting men teachers. The greater number of these (13,008) belong to teachers' families, which also supply a considerable number of female teachers (874); while other officeholders manifestly force their sons to become teachers. It is of interest that imperial and State service furnished a very considerable number of female teachers (1,038). The "privy counselor's daughter" is no isolated figure in common schools, though not so frequent as we incline to believe from appearances in some large cities. The ministry furnished 183, the army and navy 130 female teachers. The number of men teachers belonging to the last groups were 201 and 176.

As concerns the proportion of male and female teachers, details differ to some extent from what we might infer from the general statements. Thus, for instance, in agriculture, there is the difference whether the "independent farmer" be a peasant or landed proprietor; and in trade or industry, whether the one referred to be a merchant or small tradesman. Statistics say nothing about these facts; they only point out the formal differences. Neither must we lay much stress upon them, nor, above all things, deduce unfavorable conclusions for one or the other sex. As a rule, the richest families do not allow their children to pursue the profession of teaching. Among the wealthier strata the motive, almost without exception, lies in material relations. A landed proprietor, manufacturer, or merchant reduced in circumstances may stand lower than a rising peasant, mechanic, or tradesman. A palpable difference between families of male and female teachers is noticeable only in imperial, State, and communal officers. These furnish only 1,803, or 2.9 per cent of male, and 1,038, or 12.3 per cent, of female teachers. This fact, as well as other proportions of descent not to be enlarged upon here, often plays an important part in the financial and professional position of both sexes.

More striking differences come to light when we consider the two creeds. The proportions are as follows: In 1891 there were 22,199 (92.6 per cent) male and 3,527 (7.4 per cent) female Protestant teachers, in contrast to 17,737 (78.5 per cent) male and 4,853 (21.5 per cent) female Catholic teachers. In the former case female teachers constituted only one-fourteenth; in the latter two-ninths of the totals representing each creed. But how about the parentage? A great many of the Catholic female teachers belong to the agricultural class; i. e., 1,042, or 21.5 per cent, in contrast to 271, or 7.7 per cent, of Protestant teachers. That a peasant's daughter in the one case so often and in the other so

rarely attains prominence is sufficiently explained, partly by the fact that a disproportionately larger number of Catholic female teachers are engaged in the country (2,540, or 52.3 per cent, against 574, or 16.3 per cent, Protestant), and partly by the fact that Protestant teachers are educated principally at institutions affiliated with girls' higher schools, whereas Catholics are educated at special normal seminaries.¹ Noticeable, but less striking, is the preponderance of Catholic teachers whose parents are devoted to industrial pursuits; i. e., 1,894, or 39 per cent, contrasted with 753, or 21.3 per cent, Protestant teachers. In the group of commerce Catholics are in the minority relatively considered, namely, 776, or 16 per cent, while 734, or 20.6 per cent, are Protestants. The Catholics are fully eclipsed by the Protestants in the last group (imperial, State, and communal officeholders). This last group has 1,005, or 20.7 per cent, Catholic, and 1,695, or 48 per cent, Protestant female teachers. These differences are less pronounced among the men teachers. The numbers are as follows: Agriculture supplied 15,136 Protestant and 6,649 Catholic teachers. The number of Catholics is comparatively greater, particularly in reference to independent farmers. Industrial pursuits supplied 12,572 Protestant and 5,082 Catholic male teachers. The percentage (20 per cent) is almost the same on both sides, and identical with that of commerce (3,788 Protestant and 1,693 Catholic male teachers), while officeholders are less strongly represented by Catholics—4,026 against 1,193 Protestant teachers. It is of particular interest that a smaller percentage of Catholic teachers have fathers who are school-teachers—3,225 against 9,753 Protestants. The larger influx to the Catholic ministry amply explains this fact.

Similar records from earlier years do not exist. Comparisons would throw an interesting light on the development of the profession and thereby on common schools themselves. An old school principal, Mr. Fritz Oehmke, of Cammin, Pomerania, asserted in a late publication that teachers formerly were recruited from the better classes. He thus writes:

I shall not suppress the fact that preparatory teachers formerly enjoyed the advantage of educating talented, earnest youths for the teachers' profession. If parents mostly of the middle classes noticed that their sons combined a ready understanding with earnestness of character, they decided upon their becoming teachers; and if the local teacher and minister agreed with them their resolution was carried into effect. Out of such material something could be made; but how do we stand to-day with few exceptions? Talented children of well-to-do parents choose every profession before that of teaching. If children of such parents are of somewhat limited capacity, and in addition physically weak, the impression is that they can still become teachers. Formerly, poor people did not dare to think of their sons becoming teachers; now, their ambition is not to raise their children to be day-laborers like themselves, but to make teachers of them, that they may live like gentlemen. Even if they have no money for their education, they know that their children will be provided for in preparatory institutions and seminaries.

¹At present there exist in Prussia three Protestant (Berlin, Drossig, Augustenburg), five Catholic (Münster, Paderborn, Montabaur, Sarburg, Xanten), and two nonsectarian (Trier, Posen) normal seminaries.

In judging the whole character of the pamphlet the author can not be taken too seriously, and Dr. Bosse's words that he could not undertake to guarantee the support of common education would, in consequence, be more significant.

Statistics furnish the same conclusions for male and female teachers of intermediate schools. Results on the whole are the same, only fewer teachers belong to families actively engaged in agriculture.

Fathers of the 2,955 male and 1,310 female teachers in intermediate and higher female schools are classed as follows:

	Teachers.	
	Male.	Female.
A. Agriculture, cattle raising, foresters, and hunting.....	720	100
B. Mining, industry, civil engineering.....	886	233
C. Commerce.....	813	227
D. Officeholders, teachers, liberal professions.....	988	733

In this case 529 male and 79 female teachers belonged to families of common school teachers. The social position of the fathers within these groups was the same as among teachers of common schools. The results are the following figures: Male teachers, (a) 2,480, (b) 284, (c) 191; female teachers, (a) 1,075, (b) 210, (c) 25. The preponderance of officeholders' children in this division is evident, particularly among female teachers, of whom 304 were daughters of actual officeholders, 94 of parsons, and 97 of teachers of secondary schools.

Of great importance for the official action as well as nonofficial influence of a profession is the average age of its members. A class like that of privy counselors or other higher governmental officials receives a certain prestige from the gray hairs of its members. Transgressions among them are rare, and moreover, it represents a positive view of life, a conservative one. In a class, however, in which the youthful element predominates social influence is greatly jeopardized; at all events, the whole class feels perhaps too strongly the impetus of these fresh forces, whose influence manifests itself in unguarded words and rash actions. Youth most certainly has the ascendancy among teachers, as the following statement shows:

Age.	City teachers.		Country teachers.		City and country teachers.	
	Male.	Female.	Male.	Female.	Male.	Female.
Under 20 years.....	25	35	241	42	266	77
20 to 25 years.....	2,055	607	8,048	637	10,139	1,244
25 to 30 years.....	5,035	1,347	9,003	913	14,038	2,280
30 to 35 years.....	3,496	1,151	6,177	608	9,673	1,759
35 to 40 years.....	2,761	855	4,214	353	6,975	1,208
40 to 45 years.....	2,021	527	3,040	225	5,061	752
45 to 50 years.....	1,890	366	3,225	178	5,115	544
50 to 55 years.....	1,391	209	2,617	105	4,008	314
55 to 60 years.....	962	102	2,141	63	3,103	165
60 to 65 years.....	645	60	1,668	25	2,313	85
65 years and over.....	446	14	1,135	17	1,581	31
Total.....	20,727	5,273	41,545	3,166	62,272	8,439

That "youth" is so strongly represented in the teaching profession is probably not generally known. At most one-sixth of the male teachers are younger than 25 years of age, and two-fifths are younger than 30. Male teachers up to the thirty-fifth year are in the majority. In comparison with male female teachers number fewer between the ages of 20 and 25 years, but more between 25 and 30 years, and strikingly more in the next five years. A comparison of the absolute differences between the sexes on this point would be of little value. If there should be a war between "the young and the old," the former would have the advantage of numbers, particularly in the country. A number of deplorable occurrences always taken advantage of by opponents of the teaching profession are self-explained by the foregoing figures; for if the lower five years were abandoned, i. e., if teachers were, in the ages mentioned, still occupied in educating themselves, or acting as substitutes under supervision, all in all the result would be a gain.

While the number of young teachers is large, that of old teachers is small. That only 2.54 per cent reach the age of 65 years in teaching proves that the duration of life and preservation of strength are very limited among teachers. The increase of teachers' positions in the last forty years must be taken into consideration when judging the figures. It is interesting to note that cities have proportionately fewer old teachers than the country. The 446 teachers above 65 years of age are only 2.15 per cent of city teachers; the 1,135 country teachers of the same age are 2.73 per cent. The city teachers over 50 years constitute only 16.7 per cent; the country teachers of the same age, 18.2 per cent. In this case also the great increase in cities must be considered; but it is nevertheless remarkable that of the 2,181 teachers and principals of Berlin only 1 served more than fifty years, only 3 from between forty-five and fifty, only 12 between forty and forty-five, and only 38 between thirty-five and forty years. One of the districts of Berlin ("Kleine Gaulte") numbers only 6 principals and 3 regular teachers at the age of 70 years and above. Prolongation of life is therefore hardly to be expected from settling in a large city.

More important materially than duration of life is the time of service, to which the following statement refers:

Time of service.	(a) City teachers.		(b) Country teachers.		(c) City and country teachers.	
	Male.	Female.	Male.	Female.	Male.	Female.
1 to 5 years	3,094	1,438	10,869	1,073	13,963	2,511
5 to 10 years	4,835	1,382	8,119	749	12,954	2,131
10 to 15 years	3,567	1,174	6,032	593	9,599	1,767
15 to 20 years	2,715	655	3,781	328	6,496	983
20 to 25 years	3,722	474	6,229	295	5,333	511
25 to 30 years					4,618	258
30 to 35 years	2,084	130	4,498	103	3,759	171
35 to 40 years					2,823	62
40 to 45 years	638	18	1,842	23	1,679	30
45 to 50 years					801	11
Over 50 years	72	2	175	2	247	4

This table demonstrates the same facts that are brought to light in considering duration of life; at the same time a series of other truths force themselves on our observation. The accumulation in the first lines of the above statement is even larger than in the foregoing table.

The fact that the number of young teachers is proportionately large plays an important part in the consideration of salary. Scales of salary like those lately adopted in Berlin, according to which pay rapidly increases during the first years of service, have an entirely different effect on the whole body of teachers from those long scales, the middle of which is reached late in life, and the end rarely ever. The highest ratios between the ages of 25 and 40 years should be considered. Every salary over and above these has only a problematic value. The familiar scales, according to which the highest salary is received after forty years of service, do not represent the facts very truthfully. If in all Prussian cities collectively only 710 out of 20,727 teachers serve that time, it means the institution of a lottery setting a premium upon physical endurance, and not fixing an aim attainable under ordinary circumstances. If we start the scale from the twenty-fifth year of life, the last increase in salary should be made at the thirtieth year of service, or possibly at the twenty-fifth.

The number of veterans still in office after fifty years of service is small (247, or 0.4 per cent), and has essentially decreased in later years, since the enactment of the pension law. In 1871 there were 540, or 1.09 per cent of 49,594 teachers who had served more than fifty years. During the same year 6.48 per cent had served more than forty years, in 1891 only 4.4 per cent. At present many an aged teacher, grown old in his profession, can retire earlier. During the years 1886-1891 the number of pensioners increased from 3,928 to 5,691. For the most part pensioners die soon; in May, 1886, they numbered 3,592; reduced to 1,627 in 1891. The different provinces present striking differences in regard to the time of service. In Berlin teachers who had served from one to five years (225) formed only 10.3 per cent, in East Prussia 22.22 per cent of the totality. East Prussia (31) and Hanover (40) have the greatest number of old teachers; Berlin (1 who had served over fifty years), Schleswig-Holstein (2), West Prussia (6), Westphalia (10), and Rhenish Prussia (only 28 who had served fifty years out of 8,355) have very few. The small proportion of female teachers of long service is explained by the fact that until 1864, with very few exceptions, only Rhenish Prussia admitted female teachers into common schools. Berlin followed in 1857.

The condition of teachers' families is of the greatest interest. Statistics record the following facts:

Age of fully-occupied teachers.	Single.	Married.	Those that had been married.	Living children. (a)
<i>In cities.</i>				
Under 20 years.....	25			
20 to 25 years.....	1,950	104		44
25 to 30 years.....	2,846	2,149	40	2,017
30 to 35 years.....	868	2,561	67	4,476
35 to 40 years.....	327	2,382	52	5,878
40 to 45 years.....	171	1,794	56	5,570
45 to 50 years.....	128	1,699	75	5,549
50 to 55 years.....	77	1,246	68	4,106
55 to 60 years.....	55	809	98	3,058
60 to 65 years.....	51	519	75	2,149
Over 65 years.....	10	332	98	1,520
Total	6,512	13,585	630	34,427
<i>In the country.</i>				
Under 20 years.....	241			
20 to 25 years.....	7,598	481	5	217
25 to 30 years.....	4,060	4,871	72	5,915
30 to 35 years.....	921	5,148	108	11,865
35 to 40 years.....	280	3,832	102	12,874
40 to 45 years.....	137	2,835	68	11,423
45 to 50 years.....	104	2,990	131	13,199
50 to 55 years.....	80	2,396	141	11,525
55 to 60 years.....	70	1,881	190	9,895
60 to 65 years.....	45	1,400	223	7,173
Over 65 years.....	20	877	229	5,035
Total	13,565	26,711	1,269	88,621
<i>In the whole State.</i>				
Under 20 years.....	266			
20 to 25 years.....	9,548	585	6	261
25 to 30 years.....	6,906	7,020	112	7,932
30 to 35 years.....	1,789	7,709	175	16,341
35 to 40 years.....	607	6,214	154	18,752
40 to 45 years.....	308	4,629	124	16,993
45 to 50 years.....	230	4,679	206	18,748
50 to 55 years.....	157	3,642	209	15,691
55 to 60 years.....	125	2,690	288	12,453
60 to 65 years.....	96	1,019	298	9,322
Over 65 years.....	45	1,209	327	6,555
Total	20,077	40,296	1,899	123,048

a Eight-elevenths, or 72 per cent, of the children are under 18.

Cities and country present very little difference. The marriage question is affected to some extent by the fact that teachers under 25 years of age are more numerous in the country (8,325, or 20.04 per cent) than in cities (2,080, or 10.03 per cent). On an average, country teachers marry sooner than their city colleagues. In cities the number of teachers married before the completion of their twenty-fifth year amounts to 104, or 5.26 per cent of the whole class at this age; in the country, to 481, or 6.13 per cent. Between 25 and 30 years of age, 2,149 (42.5 per cent) are married and 2,846 single; in the country, 4,871 (54.12 per cent) are married and only 4,060 single; between 30 and 35 years of age, 2,561 city teachers, or 73.25 per cent, are married and 868 single; in the country, 5,148 (83.30 per cent) are married and 921 are single. The number of bachelors over 50 is quite small. Altogether there are 423—in cities 119, and 234 in the country—which constitute about 0.7 per cent of the totality, and hardly compare with the married teachers or widowers older than 50 and numbering about 10,582.

Statistics also record the number of living children. Altogether there are 123,048. Every marriage averages almost 3 children (2.9); 2.4 for cities (34,427 children) and 3.2 for the country, showing no insignificant difference in this respect either.

We can not pass over these figures without recurring to the early marriages of teachers, for a long time a favorite theme of the conservative press and even in the Diet. Dr. Bosse has given this subject also its true value. It is hardly to be commended, but easily explained by the existing circumstances, that of the 10,405 teachers whose age does not exceed 25 years, 585 (5.62 per cent) are already married. It is not even explainable why 104 out of those 585 are city teachers. The fact remains, however, that out of 19 teachers of that age 1 decides upon so early a marriage. In the country 1 out of 16 enters the married state at that early age. The number of such marriages will positively decrease as soon as the Government more firmly carries out the principle of placing the youngest teachers rarely if at all in independent positions in which marriage is often a necessity. Further on we do not notice too great a haste in marrying. As the foregoing statement shows, there are rather a considerable number of middle-aged bachelors, while the number of unmarried old men is not large.

A comparison of the aforementioned numbers with those of the statistics of the entire population is not only interesting but of importance in judging the whole subject. This is not the place to institute comparisons with allied professions, as the necessary foundations are wanting. A smaller percentage of teachers as a rule enter upon married life than the average population over 20 years of age. Whereas in the entire population of Prussia the number of unmarried men is only 46.7 per cent of the married, or 31.86 per cent of the entire male population over 20 years of age, the number of bachelor teachers is 49.8 per cent of the married, or 33.25 per cent of the totality. (Widowers are not included in either case.) This preponderance of bachelors among teachers applies exclusively to those under 25 years of age. While on an average 7.75 per cent of males between 20 and 25 years of age are married, there are only 5.62 per cent of teachers of that age married. At a more advanced age the proportions are reversed. Between the ages of 25 and 30 years an average of 48.5 per cent of men are married, and exactly 50 per cent of teachers; between the ages of 30 and 35 years the average is 76.6 and 79.9 per cent of teachers.

The number of teachers' widows is disproportionately high. While there is 1 widow to every 3.33 married teachers, or 5.25 teachers in general, the number of widows in the entire population is notably less; i. e., 1 widow to every 4 marriages, or to every 6 men above 20 years of age. The reasons for this state of the case may be the early mortality among teachers, and the disinclination and meager prospect of widows for a second marriage.

In considering personal relations of the teaching profession, the examinations deserve to be mentioned as an important point. The 62,272 male teachers and principals are thus divided according to the examinations:

Passed a common school teachers' examination.....	59,502
Passed an intermediate school teachers' examination.....	678
Passed a principal's examination.....	1,651
Passed the examination for the higher branches or the ministry.....	231
Passed no examination as yet.....	202

Of the 8,439 female teachers, 6,011 were examined for common schools, 2,107 for girls' higher schools, and 24 for principals' positions; 39 had not been examined as yet. The remaining 258 (204 examined and 54 not examined) were fully employed industrial teachers. Conspicuous differences are noticeable between the creeds. Catholic teachers (17,737) constitute 28.5 per cent of the totality; they number only 142 (20.9 per cent) of examined intermediate school teachers, and 326 (20.3 per cent) of principals. Catholic women teachers (4,843) constitute 57.5 per cent of the totality; of them 430 took the examination for girls' higher schools. With Protestant women teachers the majority (1,635) are examined for girls' higher schools, the minority (1,599) for common schools.

An interesting comparison is furnished by the teachers of intermediate and girls' higher schools. In these institutions 468 teachers "examined for intermediate schools" are employed against 1,348 examined for common schools only. The majority of "intermediate school teachers," therefore, remain true to common schools. In intermediate schools, moreover, corresponding to the small number of Catholic pupils, the Catholic element sinks into greater minority (2,664 Protestant and 281 Catholic male teachers, 1,190 Protestant and 113 Catholic female teachers), so that in the event of preferment, Catholic teachers are at an evident disadvantage, the greater, since a corresponding remuneration in common schools does not follow; on the contrary, the unfortunate law of the 26th of May, 1887, that paralyzes the State, Catholic districts are again forced into stagnation.

The question of sex not only belongs to a presentation of the subject of the teaching profession, but may in fact be considered one of the most important features. As stated before, the two creeds present entirely different results in the numerical comparison of the sexes. The proportion is unequal in the separate provinces, too. The following table shows the results for cities and country:

Regular female teachers.

Provinces.	City.		Country.		City and country together.	
	Protes- tant.	Catholic.	Protes- tant.	Catholic.	Protes- tant.	Catholic.
East Prussia.....	136	29	19	20	155	49
West Prussia.....	108	35	22	9	130	44
City of Berlin.....	904	72	-----	-----	904	72
Brandenburg.....	202	9	68	-----	270	9
Pomerania.....	183	3	7	-----	190	3
Posen.....	43	16	11	7	54	23
Silesia.....	187	185	22	60	209	245
Saxony.....	227	23	31	-----	258	23
Schleswig-Holstein.....	188	9	104	-----	292	9
Hanover.....	101	71	26	45	127	116
Westphalia.....	180	477	164	679	324	1,156
Hesse-Nassau.....	108	79	8	81	116	160
Rhenish Prussia.....	280	1,296	92	1,639	352	2,935
Hohenzollern.....	-----	3	-----	-----	-----	3
The whole State.....	2,807	2,307	574	2,540	3,381	4,847

Besides these 1 other Christian of different faith, and 58 Jewish (40 in Berlin) regular female teachers, and 207 assistants hold positions.

The eastern part of the State has throughout a few female teachers. They are confined to three provinces: Berlin, Westphalia, and Rhenish Prussia, which together have 5,815 female teachers, or 68.4 per cent of the totality, while these provinces employ only 14,808, or 23.8 per cent, of the male teachers in the monarchy.

The two creeds offer material for comparison. Collectively, there are 62,272 male to 8,439 female teachers; consequently 1 woman to more than 7 men; in other words, female teachers constitute 12 per cent of the teaching profession. Protestant schools number 3,527 female to 44,199 male teachers, a proportion of 2 to 25; respectively, or female teachers constituted 7.4 per cent of the totality. Catholic schools employ 17,737 male to 4,853 female teachers, a proportion of 2 female to less than 7 male teachers; in other words, female teachers constituted 21.5 per cent of the totality. Protestant female teachers officiate principally in cities; of the 3,527, only 574 hold positions in the country. On the other hand, the greater number (2,540) of Catholic female teachers fill positions in the country. The inequality in the distribution of female teachers of both creeds is more noticeable in the statistics of single provinces and districts than in those referring to the State. The city schools in the district of Münster employ 41 Protestant male and 11 female teachers. On the other hand, Catholic female teachers are in the majority in the same district; there are 115 male to 136 female teachers. The Protestant city schools in the district of Minden employ 241 male and 19 female teachers; the Catholic, 70 male and 60 female teachers. The district of Arnsberg numbers 613 male and 130 female teachers in Protestant city schools, and 286 male and 281 female in Catholic schools. The following figures refer to the city schools of Rhenish Prussia:

City.	Protestant teachers.		Catholic teachers.	
	Men.	Women.	Men.	Women.
Coblenz.....	94		119	76
Düsseldorf.....	1,249	208	934	521
Cologne.....	111	21	413	403
Trier.....	51	23	101	83
Aix-la-Chapelle.....	22	8	238	213

The difference in country schools is strikingly greater. In the Protestant rural schools the 547 female teachers constitute 2 per cent of the totality (29,269); in the Catholic, on the other hand, with five times as many female teachers and three-sevenths as many male (12,164), the female teachers constitute 17 per cent of all the teachers. The two western provinces again bring out this difference most prominently. The following table presents the relations in the country schools of Rhenish Prussia and Westphalia:

City.	Protestant teachers.		Catholic teachers.	
	Men.	Women.	Men.	Women.
Münster.....	62	6	422	251
Minden.....	478	7	252	116
Arnsberg.....	1,007	151	561	312
Westphalia.....	1,547	164	1,235	679
Coblenz.....	472	2	708	180
Düsseldorf.....	479	45	796	475
Cologne.....	120	3	601	313
Trier.....	243	42	909	493
Aix-la-Chapelle.....	18		733	178
Rhenish Prussia.....	1,392	92	3,747	1,639

In Westphalia the number of Protestant men teachers in rural schools is greater by 300 than the Catholic; the number of Protestant women teachers, on the other hand, amounts to little less than one-fourth of the Catholic. In Rhenish Prussia the Protestant country school female teachers are numerically not worth noticing, while the Catholic female element is almost one-third of the total number. The numbers reported from the district of Düsseldorf are particularly important. Although there were 203,000 Catholic and only 137,000 Protestant school children, the number of Catholic male teachers (1,730) equaled the Protestant (1,728). In 1891 Protestant schools numbered only 283, the Catholic 996 female teachers.

From 1886 to 1891 the total number of female teachers increased from 6,848 to 8,439; hence, by 23.2 per cent; while the number of male teachers at the same time advanced only by 7.55 per cent. The increase at present particularly affects Protestant teachers (1886, 2,551; 1891, 3,527, an increase of 40 per cent in five years). In 1886 Catholic female teachers numbered 4,233; the increase (14 per cent) was therefore not so important. In 1861, in Prussia, 431 Protestant and 1,321 Catholic

female, and 23,023 Protestant and 10,347 Catholic male teachers were engaged in teaching in the common schools.

The question of female teachers can not be further amplified here, or we should be obliged to clear away a heap of worthless superficialities and manifest untruths derived from different sources. We may consider the increase in the number of positions for women teachers an evidence of educational interest, if we are satisfied with superficial reasons. It is often a question of securing an income for unmarried women, a motive never entirely wanting. The introduction of the woman question is a palpable superficiality. A female teacher displaces a teacher's wife, so that the woman question is really not promoted a single step. However, that is a subject which does not permit of being treated secondarily. He who wishes to write on this subject intelligently must not be afraid of clearing away errors. From the school standpoint, there is much to say on the question, particularly in reference to school politics. It is known what great value the Catholic clergy place upon the service of women teachers.

And now to the question of salary. The statistics are so well known that we might leave them out, if thereby one of the most essential features in a presentation of the condition of Prussian common school teachers were not omitted.

The following report for the year 1891 includes all allowances for time of service, exclusive of free dwellings and fuel, or corresponding indemnification:

Teachers in cities and country.

	(a) In cities.	(b) In the country.	(c) Total.		(a) In cities.	(b) In the country.	(c) Total.
Below 450 marks.....	40	87	127	1,351 to 1,500 marks.	1,783	3,339	5,122
450 to 600 marks.....	355	2,309	2,664	1,501 to 1,800 marks.	3,544	3,028	6,572
601 to 700 marks.....	1,544	6,127	7,671	1,801 to 2,100 marks.	2,261	1,092	3,353
750 to 900 marks.....	2,318	8,692	11,010	2,101 to 2,400 marks.	1,460	388	1,848
901 to 1,050 marks.....	2,306	6,952	9,258	2,401 to 2,700 marks.	632	107	739
1,051 to 1,200 marks..	2,220	5,041	7,261	2,700 to 3,000 marks.	224	40	264
1,201 to 1,350 marks..	2,070	5,011	7,081	Over 3,000 marks ...	252	15	267

The average income in cities is found to be 1,452 marks (\$345.57), in the country 1,000 marks (\$238); cities and country together, 1,203 marks (\$286.31).

Whoever wishes to acquaint himself better with the import of these numbers should consult the proceedings of the Prussian House of Deputies from the 10th of January, 1893, and the scheme for the improvement of the common school system and salaries of teachers, male and female, in which the minister of education, Dr. Bosse, presented a tabulation of these numbers that might have aroused qualms of conscience in the most zealous advocates of small salaries.

The fluctuation of the amounts of teachers' salaries in Prussia is demonstrated in the following table:

Average salary.

Year.	In cities.	In the country.	In cities and country together.
	<i>Marks.</i>	<i>Marks.</i>	<i>Marks.</i>
1820	638	258	323
1861	846	548	634
1871	1,031 (1,042)	687 (678)	790 (797)
1878	1,405 (1,414)	953 (954)	1,107 (1,102)
1886	1,275 (1,279)	951 (954)	1,060 (1,067)
1891	(1,452)	(1,080)	(1,203)

The numbers in parentheses are the average amounts for the whole State, consequently include Schleswig-Holstein, Hanover, and Hesse-Nassau. The first in order refer to the old provinces only.

The proportion between male and female teachers is not uniformly regulated. The average salary of the latter in 1891 amounted to 1,003 marks (\$238.71), city; 862 (\$205.15), country, and 950 (\$227.10), cities and country together.

The salaries of male and female teachers bear the following ratios: In cities, 100 to 69; in the country, 100 to 80; on an average of 100 to 79, or 5 to 4. These about correspond to the number of hours employed by both sexes, so that the principle, equal pay for men and women, is generally carried out with Prussian common school teachers. In single instances we of course meet with differences. Oftentimes the young female teacher is proportionately or absolutely better paid than the male teacher of equal time of service (Berlin); whereas in more advanced age the male teacher is more liberally paid, a piece of social justice to be found anywhere, except in such ill-regulated conditions as those of the capital of Pomerania. This proportion should be increased if male teachers are expected to establish families and male and female teachers to retain the same social standing.

One of the most interesting tables of all the official returns is the comparison of salary and time of service. Unfortunately, the table includes dwellings and fuel; if it referred to salary only it would manifest very plain facts. But it answers every purpose as it is. The following data, demonstrating the defective regulation of teachers' salaries, are plain:

On the one hand—

	Number of teachers.	Salary.
		<i>Marks.</i>
Male teachers, 0 to 5 years of service <i>a</i>	15	2,401 to 3,000
Do	74	1,801 to 2,400
Do	<i>b</i> 258	1,501 to 1,800
Do	<i>c</i> 1,219	1,201 to 1,500
Female teachers, 0 to 5 years of service	16	1,501 to 1,650
Do	119	1,351 to 1,500
Do	<i>d</i> 43	1,201 to 1,350
Do	<i>e</i> 611	1,051 to 1,200
Female teachers, 5 to 10 years of service	8	1,951 to 2,100

a Mostly principals educated in theology, who have adopted teaching.

b Among them a teacher under 20 years of age.

c Among them 5 under 20.

d Among them 1 under 20.

On the other hand—

	Number of teachers.	Salary.
		<i>Marks.</i>
Male teacher, 10 to 15 years of service.....	1	Below 300
Male teacher, 15 to 20 years of service.....	1	301 to 450
Male teachers, 10 to 50 years of service.....	12	451 to 600
Male teachers, 5 to 10 years of service.....	57	451 to 600
Male teachers, 10 to 50 years of service.....	14	601 to 750
Male teachers, 5 to 10 years of service.....	181	601 to 750
Male teachers, 10 to 30 years of service.....	11	751 to 810
Male teachers, 5 to 10 years of service.....	152	751 to 810
Female teacher, 10 to 15 years of service.....	1	Below 300
Female teacher, 15 to 20 years of service.....	1	301 to 450
Female teachers, 10 to 30 years of service.....	19	451 to 600
Female teachers, 10 to 40 years of service.....	49	601 to 750

These figures are a convincing proof of the inadequate regulation of salaries; a female teacher 19 years old with 1,201 to 1,350 marks; a male teacher of the same age with 1,501 to 1,650 marks (rural position); and next to them a male teacher of 40 to 50, and two others of 30 to 40 years of service with 451 to 600 marks! Similar incongruities would not be permitted to exist among any other class of public officers.

The close connection between salary and service is sufficiently known, but the practical consequences are not deduced. While the salaries of bachelors and female teachers are sufficient to permit even certain incidental expenses (traveling, etc.) which other officeholders with corresponding education are allowed in greater measure, teachers with families often suffer positive want. The average is, indeed, so regulated that a moderately good day-laborer receives almost as good wages as a teacher. This can be demonstrated by a simple arithmetical example that has, of course, no claim to mathematical exactness.

According to reports on personal relations, Prussia, in 1891, had 62,272 male teachers. The salaries for 63,237 positions amount to 75,020,124 marks (\$17,854,789.51), consequently 1,186 marks (\$282.27) for each position. Sixty-two thousand two hundred and seventy-two teachers would, therefore, clear $62,272 \times 1,186 = 73,854,592$ marks. This sum must support:

Unmarried male teachers	20,077
Married male teachers	40,296
Teachers' wives	40,296
Widowers	1,899
Children	123,048
Total	225,616

Nearly a quarter of a million persons are to live on 74,000,000 marks. It is true 34,620 children are over 18 years of age, consequently are partly self-supporting. But if we calculate that many of the younger and older children must not only be supported but educated, we are not exaggerating if we allow only a bare support for all the children. What is the normal sum which a Prussian school-teacher has at his disposal for each

member of his family? If we divide the salary by the number of persons the result is 327 marks (\$77.83). But such a calculation is seriously wrong. Bachelors are counted in with 327 marks. If we contrast young and old teachers, allowing each three-fourths of the average salary, which corresponds with facts, there remains for the 205,539 members of country teachers' families a sum of 56,000,000 marks (\$11,900,000) in round numbers; i. e., 272 marks (\$64.74) to a person; in round numbers, 75 pfennig or 17 cents a day, or 3.75 marks (89 cents) for a teacher's family, and this leaves no allowance for abnormal cases of ten or more members, since in teachers' families, as in schoolrooms, overcrowding is not rare. This belongs to the natural history of Prussian common school teachers.

These salaries are not all derived from schools; a not inconsiderable part are derived from church services; another part must be collected from the utilization of lands. In 1891 the number of school positions united with church offices amounted to 15,430. It is greater on the Protestant than on the Catholic side. In the former case, out of 17,737 teachers only 3,082 held church offices. In cities the two creeds, collectively, performed between 1,555 and 390; in the country between 10,793 and 2,692 church service. The payment of church functionaries averages greater on the Protestant side; in cities 404, in the country 312 marks, whereas Catholics received only between 308 and 247 marks. Protestant church service is best paid in the communities within the district of Gumbinnen (1,191 marks on an average); then follow the city positions in the district of Stralsund (850 marks). Last in order are Cassel (97 marks), Bromberg (94 marks), and Wiesbaden (72 marks). Catholic ecclesiastics are paid somewhat better only in the communities of Königsberg (501 marks) and in the cities of Liegnitz (478), Oppeln (472), and Hanover (572 marks).

A gift of land is connected with 30,684 positions, of which 2,018 are in cities. The positions connected with the best land donated are in the districts of Königsberg, Gumbinnen (4 hectare on an average), the province of Hanover (Lüneburg and Stade between $7\frac{1}{2}$ and $6\frac{3}{4}$ hectare); the poorest land donations are in Rhenish Prussia, particularly in Aix-la-Chapelle (one-sixth hectare) and Cologne (one-half hectare).

The acquisition of a home is of great importance for the welfare of a teacher's family. Unfortunately, in cities, a strong retrogression has set in. In 1871 the communities owned 7,017 teachers' dwellings, of which 2,964 were rented; the last statistics numbered only 4,292 house owners and 207 tenants. At present, principals only are furnished with dwellings. In the country there are 37,654 homes (rented or owned) for 41,545 teachers, consequently 3,891 teachers must provide their own homes. Only 2,036 dwellings are at the disposal of the 3,166 female country teachers. A home, the foundation of so many comforts in life, is becoming a rarer possession among teachers every day.

In conclusion, an important question for a class of officeholders is, How many of them can acquire a leading or self-supporting position? There are 41,545 teachers for 30,871 schools. According to the above numbers about 11,000 teachers are between the ages of 20 to 27, hence every country school-teacher can be a principal or have full charge of a school himself at the age of 27. On an average, teachers of 60 years of age and older may become principals with two or more assistants; but every country school-teacher between 25 and 50 years of age might have a position with one assistant. The ambition to superintend others in their profession is easily realized in the country as well as in cities. In 1891 there were 3,871 schools in cities. If the appointment of principals went directly according to time of service, every teacher 49 years old and over could be rector or principal in Berlin, despite the great number of schools. This end could be attained at 47 years of age. As the appointment of principals follows from other considerations, partly justifiable, rather a large proportion of teachers must relinquish the anticipation of practicing their profession in an independent or prominent position, a fact fraught with many suggestions which explain the proposition of Dörpfeld to introduce schools of four classes.

HISTORY AND DEVELOPMENT OF THE COMMON-SCHOOL SYSTEM OF BERLIN.

The following statement is abridged from a work of Dr. Hermann Zwick, one of the six assistant superintendents (Stadt Schulinspektoren) of Berlin, published as a memorial on the occasion of opening the two hundredth communal school. Omissions in this English version are made in sections of no interest to the American reader. The whole exposé is well adapted for comparison with our American conditions as found in large cities. The author touches upon the interior work of the schools as well as their exterior management and government. His work is a calm, dispassionate statement, which deserves great credit.

CONTENTS.—Historical Review—The Communal School System from 1820 to 1869—The Communal School System from 1870 to 1893, especially from 1878. (1) Repeal of tuition fee; increase in attendance. (2) Census of children of school age; estimates for classes and schools. (3) Number of classes in communal schools; buildings; their arrangement and equipment. (4) Number of pupils to one teacher. (5) Teachers, salaries, hours of duty. (6) Supervision, school districts, school boards. (7) Course of study, length of sessions, division of time, examination for promotion, branches of study: Religion, German, arithmetic and geometry, history, geography, natural history, drawing, singing, female handiwork, gymnastics, domestic training, school gardens. (8) Continuation of teachers' studies. Conclusion. Supplement: Eleven tables.

INTRODUCTION.

The education of the young is a public affair, common to all citizens; hence it can flourish only in public schools under the care and management of the entire population, endowed with the prerogatives of self-government.

This conviction is the fundamental thought that has created the Berlin common schools, and has guided all efforts toward their perfection on the part of the city authorities. The system began on a small scale, but it has since assumed the proportions of a stately, well-constructed edifice. In viewing the course of its development two periods are distinctly discernible.

During the first period, from 1826 to 1869, the city authorities gradually assumed the care of the children of school age by establishing a well-organized system of schools and making arrangements for regular attendance of all the children of that age. The tuition was either gratuitous or a fee had to be paid. However, the common school had the unmistakable stamp of a pauper school, which seemed for a time indelible, the well-to-do classes of society avoiding them and patronizing private schools.

In the second period, from 1870 to the present time, the public school system of Berlin became what it is now, to wit: A common school system in the true American sense of the word. Its exterior and interior

is well planned in outline; it is capable of being enlarged, and affords opportunities for new members to be organically connected with it. Its gates are open to the youth of all strata of the population and instruction is gratuitous, while the fulfillment of the duty of attendance is secured by laws which appear to the community as self-evident as natural laws. The common school of Berlin is supported on the principle that all children, regardless of the wealth or poverty of the parents, shall sit side by side in school, and be taught and trained according to the same principles of culture and civilization, because this is considered the best way for the elevation of the morally forsaken and for uniting the different classes of society and establishing a homogeneous population.

Within the second period the year 1878 has especial significance, inasmuch as it is the year in which the completion of the system was reached. The municipal supervisory organs that are considered necessary conditions of a sound internal development began their activity during that year, and more attention was given to the pedagogical management, as well as to a careful revision of the course of study. Beginning with that year the common school system increased to unheard of dimensions, so that within fifteen years the number of school buildings increased from 100 to 200; the number of children attending from 79,000 to 180,000; the number of classes from 1,365 to over 3,300, and the annual expenditures, exclusive of new buildings, increased from 3,890,668 marks to nearly three times that sum, namely, to 9,191,327 marks.¹ This memorial is intended to sketch the last period more minutely, but in order to understand and judge it correctly a review of the development preceding it is necessary.

THE COMMON-SCHOOL SYSTEM FROM 1820 TILL 1869.

The beginning of the Berlin common school system dates from the year 1820. In this year the city relieved the State of the care of the city poor, and also of the pauper schools. Six pauper schools, with 7 classes and 500 children, besides 700 children taught in private schools—that was the nucleus of the system; up to that year the public schools of Berlin were not communal institutions. The children of school age attended partly secondary schools, but for the most part the numerous graded and ungraded private schools, the educational results of which were very meager. The children of the poor had been attending schools connected with orphan asylums or church congregations and other corporations; a large number (in 1818 about 8,000 of 27,000) did not attend any school.

¹On the 1st of June, 1894, the number of schools was 204, with 3,435 classes (1,690 boys' and 1,709 girls' classes, 35 mixed), and a total of 182,393 children (90,297 boys, 92,056 girls), the number of teachers 4,138 (203 principals, 2,093 men teachers, 1,136 women teachers, 609 women teachers for women's handiwork, and 97 assistants); the annual expenditures amounted to 9,904,428 marks, to which the city treasury contributed 9,811,898 marks.

The first important step to a well-organized system supported by the community was made in the year 1826. The city council passed a resolution "to reorganize the pauper schools and extend them so that they would satisfy all demands." A member of the city council became the technical leader, whose title was "City school councilor." He cooperated with the city deputies and the royal commissioners in framing a plan of organization. According to his plan all poor children should in future be taught in public city elementary schools. In 1827 the city was divided into four "poor districts," each one of which should in future have at least one communal pauper school. The schools were named after the number of the district, and this has given rise to the nomenclature adhered to to the present day. Since it took a long period of years before these city schools could be erected, the attendance of pauper children was secured by paying tuition for them from the city treasury in private and parochial schools. Children of school age who were working in factories and shops during the day were required to attend evening and afternoon schools. A tuition fee was required if the conditions of the parents justified it; if not, the fee was remitted.

Since the city authorities had taken the public school system under its own care, and had appointed a professional supervisor, the former school board was dissolved, and a purely communal committee of school administration was appointed, in accordance with the law of 1808, which provided for the government of cities. This committee of the council was promptly confirmed by the authorities of the State. On the 1st of August, 1829, the committee began its work; its true name is "City school deputation." The city ordinance which called the school committee into existence defined its functions, and up to the present day they have not undergone any essential changes, although in the course of time its membership has increased in accordance with the phenomenal increase of the school system and the entire city. The committee consists of members of the "magistrat" (the upper house of the city legislature) and the common council (the lower house), of a certain number of private citizens elected by the two houses aforementioned, and of the ecclesiastical superintendents of the city (who up to the year 1877 acted as royal commissioners, that is to say, as the representatives of the State government); hence there were four distinct classes of members, namely, representatives of the upper and of the lower houses of the city council, private citizens, and ecclesiastical members. In 1853 a second city school councilor, specially designated for the elementary schools, was appointed by the council. In 1866, after most of the Catholic elementary schools had become city institutions, the archdeacon of St. Hedwich's Church became a member of the committee. Since the year 1875 the number of members has been 32, namely, 6 members of the upper house, 10 of the lower house of the city council, 11 city deputies, 4 Protestant superintendents, and the Catholic archdeacon. In the year 1877 the city

school inspectors (in this country called assistant superintendents) became also members of the committee; they are, however, city as well as State officials, and as State officers bear the title of "royal district inspectors." The business of the committee (school deputation) consists of the supervision and administration of the entire common school system of Berlin.

The city authorities began in 1827 with the establishment of communal pauper schools according to the plan agreed upon and the means available for that purpose. Up to the year 1840, 12 such schools, with 73 classes and 7,074 children, were in existence; in 1850, their number had increased to 15, having 126 classes and 10,691 children; in 1860, there were 20 schools with 185 classes and 14,178 children. The expenditures increased in the three decades mentioned from \$52,467 to \$130,945, and \$200,902. The part borne by the community after the deduction of tuition fees amounted to \$4,150 in 1840 and \$111,904 in 1850, but \$165,595 in 1860.

Each of these pauper schools had at first 4 classes or two grades; that is, 2 boys' and 2 girls' classes each, with 75 children; in all, about 300. Later they were changed, as the needs of the community increased, to 8 classes each; that is, 4 ascending grades for boys and 4 for girls, each school containing about 600 children.

These schools were partly kept in buildings owned by the city, partly in rented quarters. Since 1840 schoolhouses were built so that besides two dwellings for the principals and the first assistant teacher, there were eight class rooms. The thirteenth communal school attached to the Elizabeth Church, containing two dwellings for teachers and ten class rooms, which school has recently been removed to give room to a modern structure, dated from 1840.

The corps of teachers of these pauper schools consisted of a head teacher who was charged with the supervision of the external management of either the boys' or the girls' department. Later, this head teacher was made the principal of the entire school building. He acted as class teacher of the highest grade, assisted by the requisite number of class teachers, and a limited number of assistants, such as teachers of female handicraft. These last-named assistants did not have to pass an examination, nor were the children graded in this branch. The salaries and number of hours of work were different for teachers of boys and girls. Those of boys received between \$300 and \$400, and assistants between \$160 and \$300. The class teachers taught between twenty-four and thirty-two hours, the assistants between eighteen and thirty-two hours. Teachers in female handiwork received a compensation of \$50 per year for eight hours' work per week. Since the year 1840 a regular increase in salaries at stated intervals was arranged for. In 1855 a schedule adopted by the city council fixed the salary of head teachers at between \$650 and \$750; that of the class teachers in nine steps, between \$300 and \$650.

The course of study of these pauper schools, which it must be understood were attended by other than pauper children, embraced only that which seemed most necessary for life, namely—religion, the mother tongue, arithmetic, penmanship, and singing. To these were added in the three upper grades of the boys' classes the elements of geometry with exercises in drawing; also, in the upper classes of both boys' and girls' departments, the elements of natural history, geography, and history, while for the girls alone instruction in knitting, darning, sewing, and marking of linen was added. The number of hours work per week was thirty-two for the two upper classes, twenty-six for the two lower classes (see course of study from the year 1840 in Table No. 9). Annual examinations in the presence of deputies of the city council and the school board, who reported upon their result to the provincial authorities, were held and premiums were distributed among poor and diligent children. The success of the instruction given in these schools was almost uniformly characterized as very satisfactory, and it confirmed the city authorities in the further development of the system.

Local supervision over the communal pauper schools, as well as over parochial and private schools, was exercised by local school boards consisting each of a clergyman of the parish and two secular members. The duties of these boards were defined by "instructions" issued in 1832. These local boards were also the organs through which the city school committee conferred with the teachers. At first, this school committee was only a city supervisory board, for the administration of the pauper schools was still conducted by the board of charities. Not until the year 1837 did the school committee assume the administration, but even then the board of charities fixed the amount of tuition fees payable monthly. The principals of the schools were charged with the collection of the fees. In every case the city school committee determined what school a child should attend, i. e., the division of the city into school districts.

Only a small number of the children of school age were accommodated in city pauper schools entirely free from paying tuition fees, others (and up to 1860 they were the majority) attended free of charge any of the numerous parochial or private schools which were conducted by private teachers licensed by the city authorities. The city paid for the indigent children attending such schools. In 1840 these private elementary schools had 6,292; in 1850, 11,772; in 1860, 14,178 children of school age; that is, one-half of all the pauper school children. The fact that these private institutions were indispensable induced the city authorities to bestow much attention to their improvement.

Though direct interference in their administration on the part of the city school authorities was precluded, the authorities were nevertheless able to exert an influence over them, since they could make the assignment of pupils for which the city paid, dependent upon certain conditions. On the other hand, simple prudence prevented too severe con-

ditions, since the city could not do without these private schools, its own provision for indigent pupils being inadequate.

The Royal Government, as early as 1832 and 1839, had issued orders and regulations for the licensing, administration, management, and supervision of private elementary schools essentially similar to those intended for communal pauper schools. In 1846 the Government issued new regulations concerning improvements in management, teaching force, and supervision; and in 1855 a new course of study was prescribed for these schools.

The city authorities, after the year 1845, supported more liberally the private elementary schools to which indigent pupils were assigned, by raising the monthly fees and by granting material assistance to the teachers, such as appropriations for fuel, and by entering into formal contracts for the tuition of certain numbers of pupils of the respective districts. By these measures the principals were relieved of soliciting pupils, knowing that they could rely upon a certain number of pupils to start with. They were thus enabled to bestow more interest upon their buildings and equipment. They could now enter into contracts with assistant teachers and prevent overcrowding of classes. With the beginning of the sixth decade the number of these schools decreased quite perceptibly in proportion to the increase in the number of city schools, so that in the year 1890, with the abandonment of the last private elementary school (Hube's institution), the last remnant of a former system vanished. Several historians of the Berlin schools call the period from 1845 to 1860 the "period of private school misery."

We must return, though, to the period preceding it, by saying that city pauper schools and private elementary schools accommodated the greater part of all the pupils of school age in Berlin. Children of school age not found there either attended the elementary classes of secondary institutions, or if they were very poor and obliged to earn money during the day, they attended since 1830 so-called city supplementary schools. These were evening schools, occupied the city pauper school-houses, and were taught by the teachers of such schools. The time devoted to instruction in these evening schools amounted to between eight and twelve hours per week; the tuition fee was very low, and in many cases instruction was gratuitous. It was confined to religion, reading, writing, and arithmetic. Since 1840, no child was admitted to these evening schools unless during the day engaged in factory work. Other requirements were that the child must have completed its eleventh year of life, and have attended day school for at least three years. The results of these evening schools were anything but satisfactory, so that in the year 1848 they were changed to Sunday schools, open between 8 and 12 in the morning. These Sunday schools had in 1848, 1,639; in 1850, 1,568, and in 1860, 1,004 pupils.

When, in 1853 the old rules and regulations, dated 1839, concerning the occupation of children in factories, were changed, it was ordered

that every child engaged in factory labor must have at least three hours' instruction in a day school, and for the Sunday schools the age for admission was changed from the completed eleventh to the completed twelfth year of age. Since 1855 the Sunday schools were supplemented by factory schools with half-day sessions. In 1860 the city had still two such factory schools which later on were changed into regular city day schools, as was done also with the remaining Sunday schools. The number of factory children for which the parents desired a half-day session diminished to such extent during the seventh decade that the schools had to be abandoned.

In 1892 an imperial law was passed that no child under 13 was allowed to work in factories, and children over 13 only in cases where the common school course had been completed, and dispensation from attending school was obligatory. This law had a remarkable effect upon the schools, as is clearly seen from the statistics which show an increase in the number attending advanced grades.

Up to the middle of the forties the city authorities had laid the foundation of a system of communal schools which was able to develop without revolutionary measures or violent reforms; that is to say, provision necessary to accommodate all children of school age was made possible. Now it became necessary to create authorities which would secure the enrollment and regular attendance at school, so that the law of compulsory education could be thoroughly carried out. The local boards mentioned before were replaced by local school committees in the year 1845. This measure was the second important step for the establishment of an entire system that embraced all youth of school-going age, legally prescribed to be 6 to 14.

These local committees, which are still in existence, made it possible to carry out the duty of attending school prescribed by law. From that time children who had completed their sixth year were taken in charge at once, and placed in the schools where they belonged, and their attendance was constantly controlled by means of the daily register of the teachers, and the visits of the committee. At the beginning opportunities for attending school were offered, but the strata of population for which the schools were established had little comprehension of the necessity of regular attendance. "The benevolence of gratuitous instruction" (thus we read in official report of 1846) "had to be urged and forced upon the poorer people." The city authorities were in this respect quite inexorable; they were convinced that the progress of the city was dependent upon good schools and the education of the entire population. The authorities considered themselves in duty bound to enforce enrollment and attendance at schools of all the children that came under the law, and to do it with all the power at their command, even calling in the aid of the police to arrest truants and bring them to school. Although in this respect the compulsory attendance law had always been obeyed by a large majority

of the population, and both school principals and clergymen had aided the city authorities in finding and indicting refractory and careless parents; and although the royal police authorities had given their aid in securing legal school attendance, these measures had proven inadequate, because they acted from a distance, as it were, and because the city authorities were lacking the necessary truant officials for the execution of the law. In 1833 as many as 10 to 15 per cent of the enrolled children attended school very irregularly, or not at all. In that year 2,932 children were found who had not been enrolled.

The law of 1839, concerning the occupation of children in factories, gave the authorities the necessary lever for enforcing regular attendance, and enabled them to secure regular control of the attendance. In 1845 State regulations were issued for controlling the attendance of children in school and confirmation lessons. These regulations fixed the punishment for absence from school. In later years these measures were supplemented and perfected, and to this day they form the corner stone of the State law which requires regular attendance at school.

These regulations are so characteristic that their provisions deserve to be sketched. They provided for two measures: (1) The issue of so-called attendance cards, and (2) the formation of local boards as organs of the city school committee analogous to the already existing boards of charity.

The attendance cards mentioned served the purpose of finding children of school age not attending, each child attending school receiving such a card. They were distributed among the school children of the city and kept by the parents. If a member of the local boards called to see whether the children of the family attended school, the parents exhibited these cards, which was proof positive of their attendance. Of children who had no such cards it was presumed that they failed to attend school. Whenever a family moved and announced its new address at police headquarters, the police authorities demanded inspection of the attendance cards. If they were not forthcoming, it was regarded proof positive that the children of that family failed to attend school. Any such case was reported to the city school committee who instantly appealed to the organs of the law.

The local school board controlled the attendance of school children. Their members consisted and still consist of six to ten citizens each, appointed for three years by the house of deputies of the city council and confirmed by the magistrate (upper house of the city legislature) to serve in the local school board, an honorary duty which is cheerfully performed. The members of these boards have each assigned to them a number of streets and houses of their district and they visit the families living in them at regular stated intervals. Each of these boards has a commissioner, who performs the office work and distributes among the members the business to be performed.

In order to facilitate the work of these boards the principal of each school makes a report to the commissioner of cases of nonattendance. Cases of justifiable absence are, of course, not reported. The member of the board then attempts by personal inquiries to ascertain the causes of the absence, warns the parents, threatens in cases of recurrence, and reports to the school committee in cases wherein his influence proves futile. The city school committee then orders immediate trial and is entitled to impose fines or imprisonment. Appeals may be taken within eight days before the upper house of the legislature, that is, the magistrate, but the decision of the magistrate is considered final.

These provisions, and especially the activity of the local boards and their commissioners, as well as the application of fines and imprisonment, proved successful and beneficial. Within a brief period of time after the regulations were adopted, school attendance became regular and the number of nonattendants without cause decreased rapidly.

While the local school boards controlled school attendance, the business of placing children in the schools was performed by the central committee, and the applications for attendance in free schools or release from paying fees and the gift of free text-books for poor children, were still performed by the board of charity.

The next step taken in the progressive development of the whole system was the complete severance of the city school system from the board of charity and the management of the institutions for the poor. It took some time to bring this about. The main idea which was discussed was to change the local boards into organizations which would perform on a smaller scale, of course, the same duties which the central school committee did for the entire city. However, this plan had to be given up because if the city school districts were made independent it would necessarily presuppose a severance of the parochial and the school authorities, and in this case the clergy insisted upon appointing the supervisory staff. This would seriously have weakened the influence of the central authority.

Though the plan of making the local boards independent was dropped, their functions and authority were increased. All former duties of the commissioners of the poor were transferred upon the local boards and their commissioners. On December 17, 1868, the revised series of regulations for the local school boards of the city of Berlin were issued. According to them the city was divided into forty school districts and each district into ten divisions for inspection. The local boards consisted of the councilmen of the respective city district or their substitutes, the principals of the public elementary and private elementary schools of the district, and a number of the citizens appointed by the city council, among whom one must be a principal of a school.

The sphere of duties of these local boards comprises at present—

(1) Keeping a list of all children of school age living in the district. The royal police office aids the board by furnishing quarterly a list of

all new children of school age and of all those who have moved during the three months past. The so-called attendance cards were abandoned because unnecessary.

(2) The proper distribution of the children within the schools of the district.

(3) Control of the attendance.

(4) The fixing of the amount of tuition fees as well as the granting of release from paying.

(5) Granting of free text-books and other school appliances of instruction.

Each board appoints for each of its ten divisions of inspection a commissioner who conducts the office business of the board, and acts as a curator for the various buildings within the district. This new organization began April 1, 1869, and in the course of time it has been subjected to slight modifications. Since 1878 the school districts have increased their divisions to sixteen each instead of ten. The following table shows how enormously large the apparatus for managing the schools of Berlin has become:

Year.	Local boards.	Members.
1878.....	88	1,003
1885.....	130	1,464
1889.....	150	1,670
1890.....	151	1,682
1891.....	152	1,700
1892.....	160	1,820
1893.....	168	1,972

The new order issued April 6, 1875, for the purpose of controlling the attendance in school and providing punishment for unexcused absence, has had a good influence upon the regularity of attendance. The number of indictments decreased from year to year. This result is all the more favorable since the number of children of school age has increased quite considerably. It would be still more favorable if the public could be generally convinced of the fact that the termination of the school age is not the completion of the fourteenth year of life, or the children's confirmation in church, but the successful completion of the course prescribed for elementary schools.

The preparation for confirmation in church is not controlled any longer, but it is the duty of the principals of schools to hand in to the authorities at the beginning of every half yearly term a list of those pupils who have completed their thirteenth year of life during the semester just closed, and have not received any preparation for confirmation. The organization of local boards and their activity has been and is now the foundation of communal school management. That the most intense interest coupled with greatest readiness for pecuniary sacrifice for school purposes permeates the entire population of the metropolis of Berlin; that to-day there can scarcely be found a

Berlin child that escapes its duty to attend school, it may be said that these results are owing to the nearly two thousand men who have placed their time and strength into this honorary and unremunerative service.

The city government had meanwhile gradually increased the pauper schools, had raised the salaries of the teachers, and effected improvements in exterior and interior organization of the schools. Yet the greater number of children up to the year 1860 were still accommodated in private schools at the expense of the city, and not until the middle of the sixties did the city authorities establish a greater number of communal schools. This had the inevitable effect of reducing the number of private schools. The following table will show this plainly:

Year.	City pauper schools.	Classes.	Pauper children.	Private schools.	Paupers in private schools.
1840	12	73	7,074	42	6,292
1850	15	128	10,691	43	11,722
1860	20	185	13,703	43	14,176
1865	33	341	20,344	26	10,831
1870	53	615	37,663	20	11,959

Despite all preventive measures the communal schools bore the unmistakable stamp of pauper schools. They accommodated the pauper children who paid nothing, as well as those who were admitted at reduced rates. The private schools, however, were open to all children who could pay the tuition fee. As late as 1869 the connection between the school committee and the board of charity existed, for it was the latter-named board which fixed the tuition fees and furnished the appliances of instruction, such as text-books and other things.

The idea to change the character of the city schools—that is to say, take away from them the odium of being pauper schools and make them institutions of the civil society for all children of school age, rich and poor—spread quite rapidly during the sixth decade. It was borne by the conviction that such a change was necessary in the interest of justice and equality. To wipe out the difference between rich and poor, at least in the public schools, and to mingle the children of the poor and forsaken with the children of parents better situated, and thus promote an approach of the different classes of the people to each other and make a true elevation of the lower classes possible, was a noble undertaking, the results of which have been greater than any of its earliest promoters dared to prognosticate.

Social equality in school was the principle to be carried out, but to practically do so an entire abandonment of all school fees and the introduction of gratuitous instruction in all the city elementary schools became necessary. This principle of gratuitous school attendance has guided all the measures of the city authorities with regard to the elementary schools during the last twenty-five years with the most beneficial results.

THE COMMON-SCHOOL SYSTEM FROM 1870 TO 1893.

(1) *Abolition of tuition fees; increase of pupils.*—On the 22d day of December, 1869, the city council, upon motion of the magistrate (or upper house of the city legislature), resolved that “on the 1st of January, 1870, tuition fees in the Berlin communal schools shall be abolished.”

Article 25 of the constitution of the Prussian Monarchy, adopted in 1850, contains the following provision: “Instruction in public elementary schools is to be gratuitous.” This constitutional provision was not carried out in the city of Berlin until the year 1870. The resolution quoted gave to the communal schools of Berlin their present character of common schools for the entire population.

The report of the city government of Berlin, embracing the period from 1861 to 1876, says:

The city government has rarely ever adopted so beneficial a measure and one of such unprecedented boldness as gratuitous instruction; nor has there ever been in the entire population a pecuniary sacrifice so readily made as that which this step called for.

Ever since the pauper schools became city schools the tuition fees had been fixed at a certain normal rate, only indigent pupils being exempt from the payment. The principals of the schools collected the tuition fee monthly and charged 10 per cent commission. In 1868 the sum total of expenditure for the public elementary schools amounted to \$489,770, while the tuition fees amounted to only \$46,090, or 9.4 per cent of the entire sum.

It is obvious, therefore, how little the communal schools were in demand by the paying strata of the population; also why they were generally called pauper schools. The situation was not satisfactory; it prevented the development of the system, essentially hindering its educational influence, because the citizens who were better situated kept their children from contact with the so-called pauper children by patronizing private schools.

In one of the meetings of the committee to which the question of gratuitous instruction was referred, it was said that the most lamentable feature of the existence of pauper schools was the immoral influence upon the nonpaying children because from their earliest youth they bore the official stamp of poverty. And the gentleman added that the tuition fee was a tax paid by the poorer classes. Tuition fees were not based upon property or income, but upon the size of the taxpayer's family; they burdened him the more, the more children he had. The wealthier strata of society would be given an opportunity by the abolishment of tuition fees to aid the social needs of the people without giving alms, and without disturbing the economical order of social intercourse; hence the abolishment would be of the greatest and most enduring benefit to the entire community.

The present common school, in which tuition is gratuitous to all, has to be maintained by taxes paid by all; hence it must be open to the children of all the citizens. Its establishment was not any longer left to the pleasure of the city government, but had become a necessity, a duty, determined by exterior factors. The duty of establishing and maintaining city schools had to be performed even though the number of children to be accommodated should increase beyond all expectation and prognostication. It was not enough to simply perform the duty, it was a matter of paramount importance to do so in the best possible manner; that is to say, all the communal schools which had hitherto been considered pauper schools had to be so improved that they could meet the just demands of the wealthiest members of the community and face the criticism of experts without fear or favor. And, indeed, during the last twenty-three years the common school system has changed in extent beyond all expectations and has claimed an amount of expenditures greatly in excess of what had been calculated; its inner and outer development has demanded the greatest energy from all who were called upon to manage and conduct it. In judging its results, the extent of the task solved within a little more than two decades must be considered, and also the fact that it was not an establishment upon the virgin soil of a new state, but an organic development of existing institutions. If we consider this we shall see why the best intentions had sometimes to give way to what was absolutely necessary or merely attainable.

It was very natural that the poorer population, who had felt the tuition fee as an oppressive burden, at once sought the gratuitous common school. Not less than 12,900 children came in 1870 and 1871 and demanded admission; the elementary grades of secondary schools lost 3,500 children. That was the beginning of the transition period. The year 1872, the year in which the 5,000,000,000 francs from France poured into Germany, decreased the influx of nonpaying children, but their number was still 2,041. From 1873 until 1878, that is, in five years, the number of common schools increased from 71 to 104; the number of classes from 950 to 1,457; the number of children from 55,589 to 86,652. The further development of the common school system, from 1878 until 1893, is given in tables at the close of this article.

The population of Berlin increased within fifteen years (from 1878 to 1893) by about 600,000. The number of common school children by about 100,000; the number of school buildings by about 100; the number of classes by about 2,000. The increase per year was, on an average, 40,000 inhabitants, 6 to 7 schools, 130 classes, and 6,600 pupils. The school authorities had to provide on an average for 130 class rooms and teachers, for the organization of the districts, establishment and erection of school buildings, division of classes, the control of attendance, etc. Since the year 1873 the school authorities, i. e., the city

school committee, has had annually a certain sum at its disposal for the erection of new schools.

The enormous extent of the work and the great responsibility is at once admitted, for it is one thing to annually add a few more classes to a system of schools and another to add the enormous number of 130. If we compare a small town of 40,000 inhabitants with Berlin, we see that Berlin has increased to an extent equal to fifteen such cities. This new city, as it were, added every year, was not added on the outskirts of the city, but these new 40,000 inhabitants spread over the entire extent of the city, each one seeking to satisfy his own interests with reference to occupation, rent, etc. And the new 6,600 children every year called for admission in all the schools available, so that the constant shifting of the school population made a ceaseless vigilance in the control of attendance necessary.

The population, however, did not increase in the regular manner indicated. It varied between 30,000 in 1878 and 56,000 in 1888 and 32,000 in 1892. The increase of the next following year could never be exactly foretold at the close of any school year. From 1878 until 1885 it rose steadily until it reached the figure 52,000; in 1886 it fell to 46,000. But even in the course of a single year the population was anything but stable, as it might be expected in a city of 40,000 inhabitants with a well-established industry; on the contrary, newly arising industrial enterprises caused the laboring people of one part of the city to move into another quarter, hence there was a disturbing fluctuation of the population within the city. Experience proved that the school population was strongly influenced during any year following this apparent unrest. An important increase in the number of classes in one city district was at times followed by a standstill, nay, even a retrogression. These movements affected not only the children approaching the school age, but more so the children who had already been assigned to their schools. Extensive changes in the number of classes and children of certain city wards or school districts had to be made which necessitated a disturbance of the even progress of the work in school.

Consider the difficulty to accommodate this fluctuating population and gauge correctly the work required by these frequent increases and decreases, and we shall see how unreliable were the plans made for any succeeding year. Consider that at times it was extremely difficult to find the proper sites for schoolhouses, which difficulty the city shares with every other metropolis; think of the care needed to meet the pressing demands for new schoolhouses in order to avoid the use of rented quarters, always unsuited for school purposes; think of the many annoying situations arising from leasing buildings to accommodate temporarily the children that had to be in school by order of the law; think of the number of teachers who had to be selected from the candidates, and it will become clear that the authorities had to strain every nerve. In order to make a perfect assignment of pupils to the

proper schools, and to secure proper grading and control of attendance amid such extensive changes, enormous efforts had to be made by the organs of the city school administration. But the heaviest duty fell upon the teachers. They were expected to see to it that children shifted and shunted from district to district were properly graded and enabled to organically continue their studies without break or hindrance.

The foregoing sketch may give an idea of the extent and complexity of the work that was to be performed annually; it may indicate that it could be done only by means of careful local and individual investigation concerning increase, distribution, and fluctuation of the population, concerning enrollment and attendance in each district, and their variations, which required the most painstaking statistical work, a work that could be successful only if based upon a local census taken at brief intervals in order to make correct calculations possible.

(2) *Census of school population, estimates for new classes and school-houses.*—The entire work of assignment of pupils lies in the hands of 168 local boards. Each of these boards has a limited part of the city to attend to; each has one, two, or three so-called district schools at its disposal to which it can assign children. The commissioner or secretary of that board receives semiannually from the police authorities a list of children who have just completed their sixth year of age and live in the districts of the respective boards. He compares this list with the registers of attendance kept by the teachers, then assigns the new pupils (either born in or moved into the district) to the school nearest their residence, and hunts up the children who have failed to be enrolled. Every child assigned to a school by the respective commissioner or secretary of the local board, must be accepted by the principal at the beginning of the year, even though the classes be overcrowded.

The principal of the school reports to the school inspector or assistant superintendent, within three days after the beginning of the semester, the number of pupils enrolled and the capacity of his class rooms. After this semiannual enrollment has taken place, the principal and commissioner or secretary of the board meet with the inspector and determine upon the mode of equalizing the assignment according to the distance of the school from the pupils' residences. New classes are opened and preliminary provision is made for them. At the end of the first school week a so-called "correction conference" of all the inspectors or assistant superintendents meets at the city hall, hears the reports, sanctions certain measures of equalization taken, eventually corrects errors, and determines definitely upon the new classes to be opened and questions of grading that may have arisen during the new assignment. This conference sometimes lasts three or four days, so that within ten days after the beginning of the half yearly term the schools are in running order.

On the 1st of November and on the 1st of May of every year the principals hand in a report, for which blanks are furnished, concerning the capacity of their schools, number of classes, number of pupils enrolled, and the percentage of pupils coming from other districts. Then a summary is made of all items of statistics thus obtained, especially with reference to increase and decrease in certain districts, so that for future estimates a basis is furnished for the establishment of new schools or the opening of new class rooms. The results of statistics of the previous half year are taken to measure the provisions necessary for the following half year. This is one of the wisest provisions of the Berlin school system. The following table exhibits the changes found on November 1, 1889:

District.	Children.	
	Decrease.	Increase.
First.....	62	.....
Second.....	73	.....
Third.....	5	.....
Fourth.....	65	.....
Fifth.....	185	.....
Sixth.....	32	.....
Seventh.....	.....	41
Eighth.....	.....	1,008
Ninth.....	.....	728
Tenth.....	53	.....
Eleventh.....	.....	188
Twelfth.....	.....	354
Thirteenth.....	184	.....
Fourteenth.....	.....	951
Fifteenth.....	.....	456
Sixteenth.....	.....	7
Seventeenth.....	.....	997
Eighteenth.....	.....	806
Nonresident children	609	5,536
	126	.....
Total	735	.....
Net increase.....	.....	4,801

This summary shows that generally the number of children in the older parts of the city—that is, the one in which commerce with its large stores and warehouses is carried on—decreases steadily. Rents in the inner portion of the city increase, and the working people and others of small incomes move outward toward the suburbs. For the above-mentioned increase of 4,801 children there were opened 81 classes between the date of enrollment and the 1st of April 1890; that is a little less than 60 pupils to the teacher.

These estimates are carefully scrutinized and are submitted to the city school committee, the magistrate, and the city council, so that for the coming year the appropriation may be regulated accordingly. The executive officers are charged with the duty of assigning teachers, selecting sites for new schools, erecting buildings, etc., within the extent of the appropriation.

However carefully the assignment of pupils and the enumeration and enrollment are made, and however exact the appropriations are

measured, they do not, as experience shows, give infallible information as to what will be needed the following year, since the movement of the population is incalculable. A great increase in the number of classes in one year is not always followed by a similar increase in the next. If we consider that every new class costs the city per year 3,000 marks, or \$750, and furthermore that the erection of a new school building has to be carefully discussed, and that even after the adoption of a plan the building takes two years to complete it, it is easily seen that errors may arise and therefore the school census has a prominent financial importance for the city.

In order therefore to avoid the errors which would arise from basing the new provisions upon a short period of six months, the authorities resorted to calculations upon longer periods and especially upon estimates based upon the attendance in schools where tuition fees are charged.

The relation of children paying tuition fees and those who do not is determined by two things—first, the variations in commerce and industry, and secondly, the reputation which the common school enjoys among the public. How much the changes in commerce and industry influence the attendance was noticed during the first few years of gratuitous instruction. The year 1872 recorded a greater increase of the number of paying children over that of the nonpaying. The former was 1,400, the latter only 900. In the year 1875 the former was only 200, the latter 782.

The following table is of special interest as showing the stability of the number of paying children:

Year.	Enrolled children between 6 and 14.	In free schools.		Paying children.	
		Number.	Per cent of enrollment.	Number.	Per cent of enrollment.
1878	115,173	79,981	69.44	35,192	30.56
1879	121,252	86,852	71.63	34,402	28.37
1880	127,553	93,591	73.37	33,962	26.63
1881	136,924	102,656	74.97	34,269	25.63
1882	147,436	112,863	76.55	34,573	23.45
1883	156,744	122,098	77.90	34,646	22.10
1884	166,401	131,933	79.24	34,568	20.76
1885	178,314	142,982	80.19	35,332	19.81
1886	184,968	149,514	80.88	35,354	19.12
1887	191,690	156,053	81.41	35,637	18.59
1888	197,748	162,230	82.04	35,518	17.96
1889	202,277	166,619	82.37	35,658	17.63
1890	205,111	169,681	82.70	35,492	17.30
1891	208,165	171,994	82.62	36,171	17.38
1892	209,350	173,338	82.95	36,012	17.14

In 1879 the sum total of the first eight generations (that is, of children between 6 and 14) in the common schools was 86,852, in the pay schools it was 34,402; in 1885, the two numbers were 142,982 and 35,332; hence the total of eight generations in these eight years increased by 57,094, and of this increase the common schools gained 56,352, while the pay schools only gained 841. But 841 children are

about the sixty-sixth part of the total increase in the common schools. During the following year no change in these relations took place; the number of paying children remained almost the same, and since the year 1888 the new school children are almost entirely absorbed by the common schools. Since that year the school authorities do not, and need not consider the attendance in the pay schools when they estimate the appropriations for the coming year, or the erection of new schoolhouses. Parents who could very well afford to pay tuition fees for their children send them to the common school for elementary instruction, and thereby prove the general and deep-rooted confidence in the work done in these schools.

According to the official inquiry of July, 1894, the parents of 182,347 common school children were:

Laborers and artisans	108,362
Independent artisans and tradesmen	44,155
Subaltern officers, teachers, and military men	20,162
Engineers, merchants, physicians, high-grade officers	9,278

It is plain that the level of the social strata that intrusted their children to the common school gradually rose, but an inevitable consequence of it was that the demands made on them became greater, hence the schools became more successful and better, and thus also more attractive to people of means and culture. But when that part of the population patronizes the schools their influence upon the lower strata rises perceptibly. In this respect the gratuitous instruction in the common schools has fully realized the expectations entertained by the advocates of gratuity.

(3) *Number of classes, school buildings, and equipment.*—The measures taken by the authorities make it possible to follow the needs of the school population without delay, and to satisfy them soon after they arise; it is done in organic connection with existing institutions and in the best possible manner. Berlin possesses at present a well-organized school system which is evenly distributed over the entire city. The royal authorities state in their official report of 1886 that “according to minute calculation of distances and areas, Berlin of all the cities of the Kingdom is best provided with school facilities.”

The normal course of study prescribed for the Berlin common schools provides for six ascending grades. The “mixed” schools had originally a department for boys and one for girls, hence 12 classes. As late as 1874 the first 17 communal schools had each 6 boys’ and 6 girls’ classes, hence their school buildings were provided with 12 class rooms. Gradually the separation of the sexes was carried on further, by designating certain schoolhouses for boys and others for girls, or erecting double buildings.

The lower classes became overcrowded, owing to the rapid increase of the population and the withdrawal of pupils from the upper grades; hence parallel classes were arranged for the lower grades, so that in

the course of time some of the schools had as many as 20 classes. In 1878, 99 schools had together 1,358, or an average of 14 classes; in 1886, 156 schools had together 2,586 classes, or on an average 17 classes. Meanwhile the average number of pupils per class had risen from 54 in 1877 to 55.72 in 1886. Upon the basis of these experiences the normal number of classes for each school was fixed at 16, and that number was officially adopted in planning new buildings.

On the occasion of sanctioning a building plan for the forty-fifth communal girls' school, in 1885, the question came up how many classes a principal could supervise without disadvantage to his pedagogical duties. This question was of importance, since it arose from the idea that an unwise economy might increase the number of classes indefinitely, so as to go beyond the capacity of the principals and injure the work of the schools. The central school committee decided the question by a resolution in January, 1886, that 20 be the maximum number of classes of an elementary city school, though the supervisory staff expressed the opinion that 16 should be the maximum.

The following reasons were advanced by the supervisors: The duties of a principal (or rector, as he is called in Berlin) are: (1) He must know and observe those children who awaken apprehension by their conduct and social influence; (2) he must guide and promote the course of development of such pupils as are prominent in diligence and talent; (3) he must be well informed concerning the conduct and results of the teachers, and support and aid with advice especially the younger colleagues; (4) he must conduct the exterior management of the school, the business of enrolling, must keep lists for the purpose of controlling the attendance, conduct the correspondence, and supervise the work of the janitors.

However, the city council decided that 20 class rooms be fixed as the maximum number to be supervised by one principal, although the magistrate favored the substitution of 16 as the maximum number. The question has given rise to much discussion, and is not, as it appears, definitely settled; it creates new discussion every time a new schoolhouse is to be built. At present 14 of the 200 communal schools have over 20 classes.

The city authorities have of late years promoted the building of schoolhouses in the most generous manner. During the period from 1882 till 1888 the enormous sum of 12,710,000 marks, or \$3,024,980, had been expended for the erection of elementary school buildings. The estimate of appropriations for 1885-86 required for the five years following altogether 50 of such buildings, or 10 per year. After that it was thought that 5 new buildings per year would suffice. That was the plan. The actual facts are, that during the five years mentioned 42 new buildings were erected; in 1889, 8 more; in 1890, 6 more, so that the projected number was exceeded by 6. During the last three years, 1891 to 1893, again 12 buildings were found necessary, so that in the

period of 1878 till 1894 the annual increase in the number of school-houses built and owned by the city was between 6 and 7.

The expenditures for new buildings during the period of 1878 till 1893 will be found in Table 5; the sum total was 23,941,512 marks, or \$6,698,080. To this should be added the cost of enlarging buildings of former periods, which amounted to 311,322 marks, or \$74,095.

The number of classes has increased from 1,264 in 1876 to 3,435 in 1894. Table 6 gives the exact data. One hundred and eighty-five classes are accommodated in rented quarters and 13 classes in city buildings not designed for schools.

Despite the vigorous activity on the part of the authorities in building new schools, the annual increase in the number of pupils makes it necessary from time to time to rent temporarily rooms and buildings for school purposes. While in 1878 the city had 88 schoolhouses of its own and 16 schools in rented buildings, the number of buildings owned by the city in 1885 had increased to such an extent that only 11 of the schools were in rented quarters. (Compare Table 1.) At times, especially at the beginning of a school term, so-called half day classes are organized, in order to accommodate all the pupils enrolled. This, however, is done only for a short time, until the authorities have found proper localities for housing the classes.

With the enormous increase in the number of schools and houses changes and improvements in the size, style of architecture, and equipment have gone hand in hand, and are now in harmony with modern educational demands. The high prices of the ground made it necessary to utilize the space as much as possible without violating hygienic and educational requirements. In the course of time certain typical plans have been agreed upon for sites of certain dimensions and location. The older buildings contain 10 to 12 class rooms, besides a dwelling for the principal and the janitor. These buildings have neither a large session room in which the whole school can be assembled, nor satisfactory conference rooms and laboratories, nor have they gymnasias for physical exercises. Their fronts are plain, and have a coat of plaster painted. These old buildings have separate stairways and corridors for boys and girls. The mode of heating is very primitive, namely, by stoves. In later years the class rooms were built much higher. Hot-water heating is resorted to, ventilating shafts are provided, and the playgrounds have each a gymnasium for physical exercises.

In cases where the site would allow it a double schoolhouse was built, one for boys and one for girls. They do not stand back to back, so to speak, but are separated from each other, each one having its playground on three sides. During the last few years, after the authorities had become able to cope with the increase in population, and could find sites in the suburbs where ground was cheap, economizing in space has not been so necessary. The space of a class room is calculated to

be 54 square meters, which will give room for 70 pupils in the lower grades, 65 in the middle, and 60 in the upper grades, so that each pupil has 0.77, 0.83, and 0.90 square meter space. All new school buildings have a spacious session room, an office for the principal, a conference room, a museum or laboratory, and stationary washstands for the children. In most of these school buildings the principal and the janitor have dwellings.

The mode of heating adopted for new buildings is that of hot water or air. In late years the hot-water heating is preferred. The schoolhouses commonly are four-story buildings, accessible by broad stone stairways. The corridors are wide and conveniently lighted. In older schoolhouses the corridors were rather narrow, but the new buildings are provided with spacious halls, which run alongside the class rooms of each story. The size of the class rooms is 9 by 6 meters (or about 30 by 20 feet). Each class room is provided with three windows. In order to keep the air of the schoolroom pure, especially from the odors rising from moist wraps and overcoats, special cloakrooms are provided for. In order to control the movements of the pupils in the corridors and yards they are allowed to pass only through specially designated doors, while others are closed to them. This is done also for the purpose of preventing contact with strangers entering the schoolhouse to transact business with the principal and teachers.

In order to obtain a proper standard of measurement for the conditions of light in the schoolrooms a number of careful investigations has been made during several years with Weber's photometer. The results of these measurements and calculations are being used in planning new buildings.

Since the year 1889 the authorities have adopted into their normal schoolhouse plan one special room for the purpose of serving as an asylum for children after school hours. This asylum is usually situated in the basement, provided with suitable furniture for manual work, and is used to occupy the time after school hours of boys whose parents are working in factories. Several of the new schools have this commendable feature.

The fronts of the new school buildings are built of pressed brick with stone facings and terra cotta ornaments. The dwellings of principals could not well be provided for in double schoolhouses; in these cases a separate dwelling house is placed adjacent to the schoolhouse. Usually the dwelling faces the street, and the schoolhouse is situated in the inner court of an entire block. The gymnasium also is a separate building; it is commonly 19 by 10 meters in size (or about 65 by 35 feet). It is provided with all the necessary apparatus and appliances for physical exercises.

The area of the playground is determined by the number of classes. It is always intended to afford the children time for play during recess; commonly, the play ground is calculated to require $1\frac{1}{2}$ square meters

area for every pupil in the school. Hence, a school with 2,000 pupils requires a playground of 3,000 square meters. The playground for boys contains some apparatus for gymnastic exercises in the open air.

A site for a double school, according to these requirements, must measure between 4,500 and 5,000 square meters. In the outskirts of the city, where the ground is cheap, larger sites are selected.

The equipment of the class rooms comprises school benches (single seats are not yet considered necessary in German schools), teachers' desks on platforms, cupboards, blackboards, etc., which are calculated to cost 550 marks (\$131) per class. The pupils' benches are arranged for three or four pupils each. The following are the measurements (in centimeters) applied in providing seats:

	Length of seat.	Width of desk.	Dis- tance.	Width of seat.	Height of desk behind.	Height of desk in front.	Dis- tance from seat to desk.	Height of seat.	Length of seat.
Lower grades.....	68	34	6	28	67	59	25	34	53
Middle grades.....	74	37	8	29	70	65	27	38	56
Upper grades.....	89	40	10	30	75	70	28	42	59

In a few schools a more modern construction of desks and seats has been temporarily used, but the authorities have not as yet adopted it for the entire school system.

Particular attention is given to appliances and apparatus for the study of physics and natural history. For physics, apparatus is provided which is suitable for demonstration within the class room, is durable and strong, and guarantees the success of the experiments made. Preparations for natural history and charts, as well as specimens of plants (sent from the school garden during the summer months twice a week), and mineral cabinets for boys and girls are found in every school. In order to promote and enliven the instruction in sciences visits to the zoological gardens, the aquarium, and the urania are arranged for entire classes.

Every schoolhouse in Berlin possesses a teachers' library, equipped with scientific and pedagogic works of general value, but not with works of fiction. For the purpose of maintaining and further developing these libraries the city school authorities include in their annual appropriations the sum of 54,000 marks, or \$12,852. This sum is divided up according to the needs of the different districts. For the purpose of equipping the schools with the necessary stationery, the teacher of each new class room opened receives 60 marks; the other schools replenish their stock as needs arise. The appropriation is made upon motion of the principal through the school inspector (or assistant superintendent). A conference of the school inspectors decides upon the books and kind of stationery to be provided for pupils and teachers. For the instruction in drawing a special fund is set aside, in order to furnish the necessary materials to indigent pupils. Text-books are

given to indigent pupils also at the central office of the school committee, while stationery is given out by the principal of each school. Every school in the city receives 30 marks per annum for new books to be placed in the pupils' library, while a new school receives a first gift of 60 marks for that purpose. For current expenses and small expenditures found necessary, such as for chemicals and the like, each school is provided with an extra fund.

(4) *Number of pupils per teacher.*—Like other cities, Berlin has made it a special object to grade its common schools, so that the children of like age should be taught together in ascending grades. Before 1860 a few schools had six grades, but since 1872 every Berlin common school is expected to have six ascending grades; some have seven or more, and it is the intention of making the organization one of eight grades throughout the system by splitting the upper grades which now are taught in two divisions each. Though the law prescribes the maximum number of pupils per teacher to be 70 for lower grades, 65 for middle grades, and 60 for upper grades—the schools in Berlin average a smaller number per teacher. The following table shows the averages for 1878 and 1892:

Grade.	1878.			1892.		
	Classes.	Pupils.	Average per class.	Classes.	Pupils.	Average per class.
I (the highest).....	161	6,549	40	448	18,797	42
II.....	203	10,016	50	525	25,341	48
III.....	240	13,101	54	565	29,968	53
IV.....	280	15,763	56	600	33,839	56
V.....	280	15,450	55	555	33,594	61
VI.....	304	18,540	60	578	35,548	62

The average number of pupils per teacher during the last eight years was as follows:

1881.....	55.00
1885.....	55.33
1886.....	55.72
1887.....	55.34
1888.....	55.59
1889.....	55.64
1890.....	55.16
1891.....	54.78
1892.....	54.14

These averages do not show the actual state of affairs, for in some schools the lower grades are overcrowded, as they always will be. Some of these lower grades have as many as 70 pupils. Nonpromotion is one of the causes of the greater number of pupils in the lower grades, though it is expected that every child entering at 6 years of age will be able to go through the entire school within eight years, there is always a considerable number who do not reach the highest grade. Hence the question has come up how to relieve the lower grades so as

to assure more individual work and attention to each pupil, and thus to enable all the pupils to pass through the entire course of study of eight years.

(5) *Teachers, salaries, and hours of work.*—The most essential factors of the work of the school and its abiding influence are good teachers; hence to procure them has at all times been one of the chief objects of the administration. For, however carefully all other requirements of public education are fulfilled—they can not suffice unless supported by excellence and devotion to duty on the part of the teachers. To secure good teachers was possible only under one condition—by offering them salaries commensurate with the demands of life in a metropolis; furthermore, by securing them regular increases at stated intervals, and offering pensions at the time of retirement, and to their widows and orphans. The salaries for the city teachers have steadily increased during the last twenty years.

In the common elementary schools of Berlin the class-teacher system is adhered to, except for certain branches in which artistic skill is required. The class teacher gives instruction in the main branches in his room. The principal, having only twelve hours per week of such work in his grade (the highest), is relieved by other teachers of lower grades whose classes have fewer hours devoted to lessons than the teacher has hours of duty.

Departmental teaching is resorted to in a limited degree, owing to the employment of women teachers, the reduction in the number of duty hours for older teachers, and, lastly, to afford the teachers opportunities for improvement in their profession. The so-called technical branches (music and drawing), though as a general thing required of every teacher, presuppose a certain exceptional skill and talent which makes it seem economical to employ the best talent among the staff of a school to teach these branches to all or many of the classes. If to this limited degree the teachers have become special teachers, it remains an inviolable rule that each class teacher shall teach the three main branches, religion, language, and arithmetic, to his own class.

The staff of a city school consists of the principal (with twelve duty hours in the school room per week), the class teachers, male and female, the assistant teachers (graduates of normal schools who have not as yet passed their second state examination), and finally the special teachers for woman's handiwork and gymnastics. The total number of class teachers, including the assistants, amounted to 3,370, among them 1,033 women in 1893; the number of special teachers for handiwork, gymnastics, and drawing was 563.

Up to the year 1863 only men had been employed. The beneficial influence of the women teachers in the private elementary schools accommodating pauper children paid for by the city, induced the city administration to employ women as regular teachers in lower and middle grades.

After these introductory remarks it will be in place to discuss more minutely the salaries and other circumstances of the professional life of the teachers. This is a fitting occasion since a new system of regular increase in salaries was adopted April 1, 1894.

Up to the year 1871 the wages of teachers were regulated by a "normal" or personal budget. This budget fixed the extent of increase in salaries at stated intervals. For class teachers the principle was adhered to that the increase should be subject to the number of years of service. Beginning with the minimum salary of 400 thalers,¹ the income increased at intervals of three and four years until at the expiration of twenty-four years' service a maximum of 800 thalers was reached. The principals at that time could reach a maximum of 900 thalers. If at the close of the entire school year a saving had been made, or, in other words, if the appropriation was not exhausted, the remainder was divided pro rata among the teachers.

The majority of the teachers consisted, in consequence of the enormous increase of classes, mostly of new teachers, with a brief period of service in Berlin, hence the lower rates of salaries were predominant. The regulation was therefore disadvantageous to teachers who entered the Berlin schools at an advanced age. On the 1st of October, 1871, the principle of granting an increase according to term of service in the city was abandoned and the so-called average salary was adopted. The authorities adopted the following scale: 900 thalers for principals, 600 thalers for class teachers, and 375 thalers for women. These sums were raised by resolution passed July 1, 1873, in the following manner: All salaries above 500 thalers to be increased 20 per cent; all salaries below 500 thalers to be increased 30 per cent. In 1874 the salaries of principals were raised 100 thalers, and in 1877 a deduction of 10 per cent formerly made for rent was abolished.

Since that year the average salaries amounted for principals to 3,540 marks (\$843), with either a dwelling free of rent or an indemnity for rent amounting to 600 marks per annum (\$143); for teachers, 2,235 marks (\$532); for women teachers, 1,462 marks (\$348). These sums furnished, by multiplying them by the number of positions existing (the number of positions is equal to the number of common school classes), at the beginning of each school year, the exact amount to be appropriated plus the estimated number of new positions created and paid for at the minimum rate. The salaries were at first for principals of three classes, 3,900, 3,540, and 3,180 marks; for male teachers in seven classes, 3,240, 2,880, 2,520, 2,340, 2,160, 1,800, and 1,560 marks; for women teachers in four classes, 1,755, 1,560, 1,365, and 1,170 marks.

In 1882 twelve positions for assistants were established. This continued for three years, so that at the close of the third year 36 of such positions were in existence. These were established for the pur-

¹A thaler equals about 72 cents, or 3 marks, but its purchasing power is greater in Germany than that of a dollar in the United States.

pose of giving the graduates of the normal schools in Berlin an opportunity for perfecting themselves in the art of teaching before entering upon their duties as full-fledged teachers. It was required that they should have passed their first state examination; that they should teach twenty-six hours a week (later twenty-eight hours), and be at the disposal of the principal for four more hours per week. The salary of these assistants was fixed at 1,200 marks. Since the average salary of a regular teacher is 2,235 marks, the administration saves 1,035 marks every year; multiplied by 36, equals 37,260 marks, or about \$9,000.

When, after 1876, the demand for teachers became very great, and the number of private schools diminished, the authorities could not supply teachers for the vacancies from the private teachers thrown out of employment, a large number of teachers provided with good testimonials came from other provinces of the Kingdom and applied for positions. They were subjected to trial lessons in the schoolroom, and if they proved themselves skillful teachers were called to fill vacancies. Thus it came to pass that while during the year 1877 eight-ninths of all newly appointed teachers had come from private schools in Berlin, in the year 1883-84 that proportion had dwindled to one-twelfth. Eleven-twelfths—or, to be exact—131 new teachers had come from outside.

From the year 1878 to 1893 the number of teachers rose from 1,015 to 2,340, an increase of 1,325. Presuming that about 30 new teachers came from the Berlin normal school and from private schools, the total number of new teachers was during these years 450; hence during the same period 875 teachers must have come from outside. It was required that they be not older than 35 years of age. Since the year 1875 this age has been fixed at 28.

The embarrassingly large number of candidates for secondary schools—that is, men who had gone through the university and had mostly acquired the degree of Ph. D., and the impossibility to accommodate them all in secondary institutions—caused these candidates to apply for positions in the lower schools. The school authorities accepted many of them, and later selected from their number the teachers for intermediate or advanced elementary schools, called *burgher schools* in Germany.

The principle of paying average salaries for men and women class teachers has been adhered to to the present day, only two amendments to the regulations having been adopted: First, the category of teachers called assistants has been abolished, and the teaching force now consists of principals and full-fledged teachers; second, that substitutes be paid two-thirds of the salaries for the time served. These substitutes were special teachers for gymnastics. Another saving was made by increasing the hours of duty from twenty-four to twenty-eight of teachers of female handiwork. The enormous annual increase in the number of positions led at the close of the seventies to a rapid advance-

ment of salaries. After the year 1886, when the number of new teachers declined, the authorities were able to fill the vacancies with younger teachers, and thus establish a more equitable ascension in the scale of salaries.

In 1878 the Berlin school system had 99 principals, of whom 28 were in the highest grade of salary, 43 in the second, and 28 in the third grade. In 1884 there were 137 principals, of whom 44 were in the first, 49 in the second, and 44 in the third grade of the salary scale. For the teachers the scale of salaries contains seven grades.

The average number of years of service for teachers before reaching the various grades was, in 1878 and 1884, as follows:

Grade of salary.	Years of service.	
	1878.	1884.
First (highest).....	18.86	18.89
Second.....	12.15	14.05
Third.....	8.59	11.60
Fourth.....	6.56	7.90
Fifth.....	4.25	5.05
Sixth.....	2.25	2.72

In 1889 a uniform increase of 90 marks per head was granted, and in that year the number of principals was 177, with an average of 3,540 marks (\$843); 1,830 men teachers, with an average salary of 2,235 marks (\$532); 920 women teachers, at 1,460 marks (\$348), and 36 assistants, with an average salary of 1,200 marks (\$285).

In 1891-92 another increase was resolved upon, and the indemnity for rent for principals was increased from 600 to 800 marks; besides, an extra annual appropriation of 90 marks was made for fuel, and the number of grades in salary of the teachers was raised from 7 to 8, so that they could rise to a maximum salary of 3,600 marks, or \$734.

The foregoing sketch shows in outlines how the salaries of teachers had gradually increased until April, 1894, when the new schedule of salaries was adopted. This schedule regulates all salaries as follows:

(1) The maximum salary in any of the elementary common schools is fixed at 3,800 marks.

(2) No new teacher begins with less than 1,200 marks. This is increased as follows:

	Marks.
After 4 years of service.....	1,600
After 6 years of service.....	1,900
After 8 years of service.....	2,200
After 11 years of service.....	2,600
After 14 years of service.....	2,800
After 17 years of service.....	3,000
After 20 years of service.....	3,200
After 23 years of service.....	3,400
After 27 years of service.....	3,600
After 31 years of service.....	3,800

(3) The time of service is counted regardless of where the teacher has served, except that it must have been within the boundaries of the Empire, hence this does not discriminate against private schools.

(4) The definite appointment of a teacher is dependent upon his reaching the second grade of salary, namely, 1,600 marks. The assistant teachers who have not as yet passed their second state examination, can not lay claim to either definite appointment or increase of salary.

(5) Teachers in orphan asylums, who have free dwelling and light and fuel, are reduced in salary 300 marks in order to equalize the salaries.

The foregoing statements have reference only to men. For women the beginner's salary is fixed at 1,200 marks, like that of the men, but they can not rise beyond 2,200 marks, after eighteen years of service.

The number of hours of duty a teacher must serve, since the year 1861, has been thirty-two for men and twenty-six per week for women.

It has, however, not been required of the teachers to fill them all, because every school had as many teachers as classes, and for manual training, female handiwork, gymnastics, and other special instruction, special, so-called technical, teachers were employed. These circumstances brought it about that the teachers' time was unequally occupied, and this caused the adoption of a regulation according to which men were paid 30 cents and women 25 cents for every extra hour's work.

Female teachers.—Women teachers were employed first, as has been stated, in 1863, but exclusively in girls' schools. Natural skill, inborn aptitude for disciplining and teaching, ease and simplicity in imparting knowledge, but especially their capacity and talent for prompting the emotional nature of children and tactful conduct, all these qualities soon dispelled objections arising from their deficient physical capacity and the social position of woman. At first only well-experienced lady teachers were accepted. It was made a condition that she should be unmarried, or that she would resign in case of marriage. Her salary was fixed at 300 thaler, her hours of duty at twenty-six per week. Women were specially appointed for the lower and middle classes of girls' schools. In 1875 a rule was adopted to employ for every 24 girls' classes, 13 men and 11 women, but in 1879 this proportion was reversed.

In 1863 the first trial was made with 10 women, and up to 1879 as many as 478 had been appointed. Of these, 87 had resigned. The maximum age of appointment was at first fixed at 35 years, but in 1889 that limit was reduced to 30 years.

There is of course a disadvantage in the fact that women teachers become claimants for pensions earlier than men. This financial disadvantage is, however, balanced by the fact that a goodly number of women resign and marry, whereby they lose their claim to a pension, contributions to the pension fund not being returned. Rapid rotation

in office, however favorably it may affect the finances, is not promoting the educational side of the question, inasmuch as it destroys the possibility of accumulated experience and pedagogical insight.

Experience showed that young teachers lost their freshness of mind and body too soon by teaching full time, hence the number of duty hours for women was reduced to twenty-two, but financial considerations and difficulties arising from the management of the schools, restored the former number of twenty-four. For certain branches, such as language, history and religion, as well as drawing, some women teachers displayed aptitude in the upper grades also.

The number of female candidates increased from year to year, partly because a greater number of young ladies adopted teaching as a profession, and partly because the decrease in the number of private schools closed avenues to an occupation formerly open.

In order to afford lady candidates opportunities for familiarizing themselves with the work in common schools, an arrangement was made in 1879, which admitted them as "hospitants" or visitors. After three or four years of irregular attendance, during which they were called upon to act as substitutes, they were considered when new teachers were appointed. At the close of 1893 the city schools had 177 of such hospitants. For special branches, such as female handiwork, drawing, gymnastics, etc., hospitants are also allowed; however, their number has dwindled considerably of late.

Since the year 1863, when ladies were first employed in the city schools of Berlin, 1,454 have been appointed; of these, however, only 1,033 are still in service, 419 either having married, died, or were pensioned. The constantly increasing number of female teachers induced the authorities to inquire into their state of health, and to find whether the profession of teaching affected their physical strength. In order to arrive at an answer to this inquiry the authorities noted down the time of absence, day after day, for a number of years. This record was carefully and conscientiously kept; it stated (1) the number of days and half days of absences in any calendar year; (2) the number of days of absence in every year of life; (3) the days of absence in every year of service. The summaries resulted in the following statements:

All the women teachers appointed between 1863 and 1893, or within a period of 30 years, had together served 9,858 years, and within that time 83,129 days had been days of absence from duty; so that each teacher was absent on an average of 8.4 days per year. Now, if we take the year to have an average of 250 school days, the days of absence amounted to one-thirtieth of the time; hence, of 1,033 teachers, about 34 had constantly to be provided with substitutes.

Observations made with reference to the age of service and absence of lady teachers show that the average number of days of absence during the first four years' service is below the general average; during later years it surpasses the general average, and after 14 years of serv-

ice a maximum of 22½ days absence per year is reached; after that, the time of absence decreases. If the women teachers are ranged according to their years of life, it is found that the average of absence remains below the general average before they have reached their twenty-ninth year of age. With those of 30 years it is 8½ days; then it decreases, but from the thirty-fourth to the forty-second year of age the time increases to 15.8 days. These numbers, of course, are subject to various accidents owing to the brief period of observation. Considering all this, the authorities have arrived at the conviction that exaggerated apprehension concerning the time of absence from duty of lady teachers need not be entertained.

Pensioning teachers of communal schools is done in accordance with the pension law of March, 1872, amended March, 1882, which law is applicable to all State officials. For the teachers a specific law was passed in July, 1885. According to the latter law a teacher's pension is partly paid by the State and partly by the community. The State's part amounts to 600 marks.

It is hardly necessary to mention the many aid societies and pension funds started, managed, and maintained by private enterprise. It suffices to show in round numbers what one of these societies does in aiding teachers' widows and orphans:

Year.	Number of persons aided.	Amount.	Year.	Number of persons aided.	Amount.
		<i>Marks.</i>			<i>Marks.</i>
1887-88	35	4,460	1890-91	56	6,848
1888-89	56	8,190	1891-92	70	6,130
1889-90	49	7,550	1892-93	50	4,987

The special women teachers giving instruction in female handiwork and gymnastics in girls' schools are permitted also to teach drawing, provided they have the necessary qualifications. The oldest of these teachers were only examined in handiwork. A small number of them had been appointed definitely before the year 1874, but without claims to pensions. All those appointed since have no definite appointment. Their number of hours of duty was fixed at eight per week, and the salary at 327 marks per year. Since the introduction of gymnastics and the possibility of passing an examination in drawing exclusively, the requirements for these special teachers were increased, making it necessary for them to be proficient either in handiwork and gymnastics, or in handiwork and drawing. The number of duty hours has been reduced to six per week, and they can not be dismissed except by giving them four weeks' notice. If such a teacher teaches more than six hours per week she can claim pay for extra work at 25 cents per hour.

(6) *Supervision, school districts, and school boards.*—The common school system of Berlin is subordinate to the royal provincial school authorities, who are in the same relation to the city schools as the State

superintendent, or the State board of education, is to the city schools in most of the United States, the provinces standing for States. The city supervisory authorities consist of the central school committee, the city school councilor, and the principals of the schools. In the rules and regulations of 1852 they were considered head teachers merely, in those of 1863 the principal of a school was called the "conductor of the school," and in those of 1870 he was termed "immediate superior of the class teachers." The rules and regulations adopted in 1875 termed the principal "the responsible conductor of the school, and the nearest superior of the men and women teachers employed in said school." From these quotations we see that their functions have greatly increased in the time mentioned. A natural consequence of this was that by resolution of the authorities, passed in April, 1878, only such teachers should be called to the principalship who had passed the required principal's or rector's examination. The official title these principals bear is that of rector. Since the year mentioned all principals had that title.

Previous to March, 1872, each communal school had its school superintendent, who was also royal school inspector; his office was an honorary one, and was usually filled by the clergyman of the parish who performed the duties pertaining to the schools only as supplementary duties. An uninterrupted intercourse between these men and the central authority was impossible, nor is a regular inspection of the schools under their charge. These men, who were only in rare cases practical educators and teachers, did not maintain any regular exchange of ideas—i. e., did not meet in council—and hence their local arrangements frequently clashed, since they were made according to no fixed principles agreed upon.

In the interest of a safe development of the entire school system a change in these relations was found necessary. The city authorities, after protracted deliberations, concluded, in October, 1877, to appoint city school inspectors whose number should be limited, but who must be theoretically and practically experienced schoolmen; their office should be to inspect the schools, represent them before the other city authorities, and regulate and conduct the teachers' meetings. The introduction of these official school inspectors into the organism of self-government and their position with reference to the State government, caused at first some difficulties which were, however, cheerfully solved by the royal authorities in a manner satisfactory to all parties concerned. It was decided that the city authorities should enjoy independence, in so far as the laws do not contradict the measures taken. The principles of the new arrangement were found in the legal enactments concerning school supervision. Paragraph 3 of the law pertaining to school supervision says: "This law does not interfere with the school supervision of communities that have regularly appointed organs for that purpose." The royal provincial school authorities finally raised the school inspectors, or, as we call them, the assistant superintendents, to the rank of royal officers.

The question whether this State commission was for a given period or for life was decided by the royal minister of education in favor of the given period. But these school inspectors as executive organs of the city authorities are also communal officers, and it is provided that the two commissions, or the two offices, should not be identical, since the latter, that is, the communal office, is one for life. The question is a mere theoretical one, so long as there is no occasion for the State authorities to interfere.

The qualifications of a city school inspector are that he be a professional teacher who has the scientific preparation of a principal of a normal school and head master obtained in a university. The minister of education determined upon these qualifications and the city adopted them. The city was then divided into six school districts, and for each a city school inspector was appointed and confirmed by the royal authorities. Being State officials as well as city officers, these school inspectors have the inspection and management of all elementary schools within their district, be they city, State, or private institutions.

The rapid increase of the school system during the following year soon made an increase in the number of school inspectors necessary; it was done in October, 1881, and the number of districts and inspectors increased to eight. In October, 1893, a redistricting of the city and an increase to ten districts and inspectors took place. Whether this number will suffice for the future it is as yet too early to surmise.

Since experience in local supervision had not been gathered in the city of Berlin, it was at first difficult for the six school inspectors to know exactly how to proceed and what to do; everything depended upon the men who with circumspection and tact entered upon their duties and conscientiously tried to follow the intentions of the royal as well as the city authorities, and meet the justifiable demands of practical school work, as well as the teachers themselves. Their work was essentially lessened by relieving them of dry routine office work, which was left to the clerks at the central school office. The chief work of the school inspectors is now to periodically inspect and examine the schools under their charge, and to report to both the city and royal authorities; to examine all the private schools; to hold conferences and meetings with principals and class teachers; make brief visits to all the classes; arrange for local changes immediately necessary at the beginning of the year; finally, consulting both with the local school boards and the central school committee as to changes in the appointment of teachers and the opening of classes. This college of assistant superintendents holds conferences every week with the royal school councilor or general superintendent as chairman. All questions of principle and technical execution, as well as questions of management and promotion, are here discussed and decided upon. Since the year 1886 the school inspectors have also been charged with the revision of the courses of study, that is to say, with the deviations from the normal

course prescribed, so far as these changes pertain to local requirements and needs. They are furthermore charged with the distribution of stationery and books within the sum appropriated by the central authority; and lastly, they are charged with arranging for leaves of absence, substitutes, and decisions in cases of contest concerning discipline. During the meetings of the central school committee (the authority which in American cities is commonly called the school board), the inspector represents all the measures with which his immediate superior, the school councilor, or general superintendent, charges him.

Since the appointment of school inspectors in 1877, the number of questions intimately related to school education requiring profound study and careful comparison with institutions in foreign countries has gradually increased; the extensive field of hygienic measures, the question of kindergartens, children's asylums, playgrounds, manual training, domestic economy, and other topics, claim much attention and interest.

The central school committee has to face these questions and needs expert advice. The committee refers these questions, as they come up, to the supervisory staff. The school inspectors, having a seat in the school committee but no vote, are desirous of having the privilege of a vote on all questions on which they themselves report. The city legislature, that is, the lower house of it, the city council, has, however, disapproved the plan. Of the original six school inspectors appointed in 1877, three have accepted other positions, one has died, one is pensioned, and only one is still active. Concerning the work of the supervisory staff the report of the magistrate, embracing the period from 1877 to 1881, contains the following sentence:

The secure development which the communal school system has had was possible only with the cooperation of these officers; they have grown within a short time to be essential factors of the system, so that their authority is as firmly rooted and their sphere of activity as circumscribed as though supported by ancient tradition.

The introduction of school inspectors led to a change in the local boards. Their membership was made to consist of three members, namely, a school inspector, one member of the school committee, and the rector or principal of the school. Their duties are well defined, as follows: The school inspector is the chairman and represents the central school committee in pedagogical questions; the member of the committee, who is also the superintendent of the building, attends to all affairs concerning enrollment and control of attendance, repairs, etc.; the rector has the immediate duties of supervision within the house and grounds, but the class teachers, being full-fledged teachers, are not hampered or influenced in the methods of teaching they may choose to select. The private schools also have a local board; in place of the former ecclesiastical member the city school inspector acts as supervisor.

The general principle has been followed that ecclesiastical school inspection was replaced by secular supervision; but for the supervision of religious instruction, somewhat different measures had to be taken. It was agreed to make a clear distinction between supervision and direction of that instruction. The former was delegated to the school inspectors, the latter was left to the religious congregations or their delegates, the clergymen.

This course was necessary, because in 1866 the city government had entered into an agreement with the church dignitaries of St. Hedwig by virtue of which the six Catholic elementary schools of the city had been incorporated into the city school system on the condition that they should be placed under city supervision and be opened for pupils of other denominations. The matter was settled by the minister of education and the provincial school authorities by adopting the following rules: The clergymen designated for the purpose shall have the right (1) to visit the schools during the hours when religion is taught; he may also examine the pupils; (2) he may demand that the course of study and the programme of topics be shown him, and he may question the teacher concerning them; (3) he is not allowed to give orders, but must consult the school inspector; (4) the hours devoted to the instruction in religion are to be made known to the respective clergymen; (5) the clergymen may be present during the examination for promotion so far as it concerns the study of religion.

It may be stated with satisfaction that the good feeling existing between the supervisory staff and the clergymen designated to direct the religious instruction has never been seriously disturbed. Only the difficulty of arranging the hours for confirmation lessons leads to considerable disturbance in the regular school instruction.

(7) *Course of study, length of sessions, division of time, and examinations for promotion.*—The aim of the Berlin common school is like that of every elementary school—to accustom the children to serious mental labor, and to lead them through strict discipline to order, diligence, and obedience. The education and training is done through instruction, and the school practices educative influence in precisely the same measure in which it conducts its instruction earnestly and successfully. The instruction embraces branches, the selection of which is determined partly by the child to be educated, partly by the ethical community in which it lives, moves, and has its being. The selection of branches of instruction can not be essentially different from those prescribed for all elementary schools of the country; and yet a rural school near the Polish boundary or the sand dunes of the Baltic coast, even though it be fully graded, has a different task of civilization from the six-grade common school of Berlin. The peculiarity of life in a metropolis demands of a city school an education fitting a child of the metropolis, and an amount of knowledge that will secure to the future citizen a possibility to support himself, and ability to aid in solving problems arising from close community with others.

The child coming from small, inconvenient tenement rooms will find in the large, light, airy schoolrooms, and in the extensive playgrounds what the parental dwelling fails to give. Vigorous gymnastics supplement the physical wants of a child by means of bodily occupation, systematic and manifold exercises for strengthening the muscles and the nervous system. The danger of too much liberty resulting in flightiness and distraction, is met by a strict school discipline and by the demand for concentration of thought upon different problems. The boys' propensity for loitering and idleness is met by the demand for home work, and the inclination for amusement and frivolity is counteracted by a strong emphasis upon ideal pursuits and ethical points of view.

The child of Berlin, growing up between high brick walls, has little opportunity for movement in the open air and observation of nature's life and action. Its comprehension of natural evidences and phenomena within its own horizon is often too limited; the city school will, therefore, furnish a small compensation by the study of plants and cuttings sent weekly from the botanical gardens, and by periodical visits to the zoological garden, the aquarium, and the urania. By means of more extensive matter and a different kind of instruction than is offered in a secondary school, the vivacious city child, whose later life will perhaps be passed amid commercial, industrial, or trade pursuits, the school will give ample nourishment—mental food—that will interest him, awaken spiritual aspirations, and create that skill which equips him for the struggle for sustenance that is sure to await him.

These few observations will make it obvious why the demands upon the elementary institutions of learning in the city must be peculiar with reference to locality, course of study, and appliances for teaching; but above all with reference to the teachers and their methods.

To meet these peculiar demands has been the constant care of the administration, especially since the year 1878, when the consolidation and organization was completed, and special tasks and problems could be taken up for the purpose of improving the interior work of the school. The first thing done was to scrutinize the courses of study and more carefully grade the matter of instruction and fix the limits of work for each grade. In many conferences of the school inspectors, principals, and teachers of both city and private schools, all branches of study were discussed, and the points of view were fixed from which the selection of the matter and best method of teaching them could be determined upon. Thus a basis was gained for the purpose of framing special courses within the frame of the prescribed normal course which, while considering the special needs of localities, would not destroy the unity and extent of the course, nor change the treatment of each branch. Rules and regulations were agreed upon in conferences of the supervisory staff and submitted to the central authority. For all these revisions teachers, principals, and supervisors were given

opportunities for an exchange of opinion concerning questions of method and educational principles.

The length of daily sessions and the hours of work were submitted to discussion and the following points were agreed upon:

(1) Instruction in the two lower grades, both in boys' and girls' classes, is to be given in the forenoon. Whether the school begins in the summer at 7 or at 8 o'clock, and in winter at 8 or at 9 o'clock, was left to be determined by local considerations.

(2) Instruction for the middle grades in boys' schools shall also be given in the forenoon, but gymnastics as well as special branches may be given in the afternoon for one or two hours. Whether one or two afternoons per week would be needed for these studies was left to the decision of the principals and teachers of each school. The instruction for girls in the middle grades was also to be given in the forenoon only, except female handiwork, to which two hours for two afternoons per week were assigned.

(3) Instruction in the upper grades, both in boys' and girls' schools, it was decided to arrange in the forenoon and leave free as many afternoons as possible. The rule was established, however, that no afternoon instruction should begin before two hours had elapsed after the close of the morning session. Usually the morning session has five hours, from 8 till 1; but when the afternoons are used the morning session closes at 12.

The revision of the course of study was of grave importance for the internal development of the schools. Previous to the adoption of the famous regulations of October 1, 2, and 3 of 1854 a normal course of study had been framed by the city authorities for communal, parochial, and private schools. This normal plan was changed in 1855 to make it harmonize with the ministerial requirements of 1854. The entire change and great external development of the schools during the following decade and the more liberal tendency of the time caused certain demands to be made upon the schools, which found expression in 1864 in an amended normal course for all elementary schools under the charge of the city school committee. This amended course gave evidence of a more liberal elementary education than was prescribed in the ministerial regulations. It provided for a seventh grade called "selecta." When, under Minister Dr. Falk, in October, 1872, the former regulations of 1854 were abolished and "general directions" were issued by the Royal Government which gave expression to principles and methods that had long been practically tried in the Berlin schools, it was easy to frame within the limits of these directions of the minister a new normal course for the elementary schools of Berlin. How the time was distributed upon the different branches and what changes have taken place within the last fifty years may be seen from Tables 9 and 10 at the close of this article.

The normal course adopted gave for each branch only the end in view, that is, the amount of knowledge to be imparted; hence the schools needed special courses, which required the approval of the authorities. These special courses were tried, both for each grade and each branch, and thus a final decision was reached. Their temporary application was necessary owing to great fluctuations of the population, which required a certain elasticity of the course.

In September, 1875, rules for the examination for promotion were adopted, and they are now in force. These regulations permit a survey of the instruction and its results. The order of examinations is fixed by the principal, who also presides, though the class teacher himself examines; it is done orally, but the written work done during the year is inspected. After that a conference of the teachers of the school, with the principal in the chair, takes place, in which cases of difference of opinion concerning the promotion of pupils are discussed. The teachers, both men and women, who during the year taught in the class have the right to vote; in cases of a tie the principal has the deciding vote. In cases where the principal objects to the promotion of a child the school inspector decides the question. All decisions concerning the promotion of children from class to class are entered upon the minute book of the conference. No child is promoted on trial and children may be returned to a lower grade if found wanting. Children who can not keep pace with the work of the class are reported to the school inspector, and all those who come from other city schools are assigned to the grade to which they are entitled by their standing in the former schools.

In 1893 the college of school inspectors conferred concerning the changes in the examinations for promotion. These changes had reference to a more minute statement of the limits of each grade and a division of the upper grade into two yearly divisions.

The regulations then adopted designated the minimum of what a pupil must know at the close of a year's work, except for the highest grade, because that question is dependent upon various factors. Generally it is accepted that a pupil having passed through the course is expected to "read fluently and with good emphasis, write orthographically, distinguish between high German and provincial idiom, know the etymology of his language, and be able to analyze a sentence. He must be able to repeat in writing a brief narrative or give a description, and know something of the lives and works of poets such as Gellert, Schiller, Goethe, Arndt, Uhland, Chamisso; he must know the outlines of their biography and have memorized some of their poems. In arithmetic he must be able to operate with decimal and common fractions, solve problems by the rule of three, and understand the customary business rules. In geometry he must be able to prove the axioms of the congruence of triangles and angles within a circle, to compare planes bounded by straight lines, and have had practice in

simple construction. Some characteristic forms of plants and animals, as well as the most familiar minerals, elementary observation of nature, and experiments with the most common physical apparatus are the limits for nature studies. The pupil must know the geography of Europe and a little of all the other continents, but thoroughly the physical and political geography of Germany. He must know the important dates and personages of German history."

This is merely the minimum of what is required of the elementary child ready to leave the common school; but the city provides in advanced private schools for more than was sketched in the foregoing. The pupils are offered, since 1876, a superior education, for which the city is ready to pay, so that they may enter secondary schools belonging to the city where they are free of tuition fees. In order to offer talented pupils a practical education for industrial pursuits some of the city elementary schools contain so-called select classes, or supplementary classes, in which twenty-four weekly hours are devoted chiefly to nature studies, physics, and drawing, but only pupils who have finished their elementary course at the age of 12 can enter these "selecta." Since the year 1884 the city has opened a number of secondary schools without Latin, which receive the pupils after they have completed their elementary course.

After these general remarks a consideration of the separate branches of study may follow.

Religion: (This being a subject excluded from the course of study in American public schools, the details of the course in Berlin are here omitted.)

Language: Instruction in the mother tongue (reading, writing, spelling, and grammar) follows the normal course of 1873. During several years following 1873, orthography and the grammatical terminology were repeatedly discussed in the meetings referred to in a foregoing paragraph. It was decided that the readers should be the basis of the spelling exercises and that in grammar the Latin terminology should be applied only in the upper grades. In 1879 a test in penmanship and orthography was ordered for all the schools. Each teacher should select the three best pupils of his class and dictate to them a piece of three foolscap pages. Many of these papers were found to contain not a single mistake in spelling; the six best pupils received prizes. These tests have taught several lessons to the teachers and have been repeated in girls' schools as well.

A definite decision concerning the rules of orthography was reached by the adoption of the new rules and word list prepared with the approval of the minister of education, which expressed the results of the famous conference for the simplification of German orthography, a conference which consisted of the most noted German philologists and authors, and which met under the auspices of the Royal Government. All text-books used had to be revised in order to comply with the new rules of spelling.

In 1878 a motion for a change of readers led to a number of conferences concerning the requirements of a good reader. It was agreed that too great a uniformity, such as would be caused by the adoption of one single series of readers for all the schools of the city, should be avoided; hence a limited number of series were adopted for certain parts of the city. In compliance with this rule the following series were introduced and are now found in use: Engeliien and Fechner, Bohm and Lübcky, Berthold and Reinicke, Schmidt and Schillmann, Wetzell and Büttner. For children who move into school districts where other readers are used, exchange depots are arranged, so that they may change their readers without cost to the parents.

Arithmetic and geometry: As early as 1868 a ministerial order was carried out with reference to the teaching of decimal fractions and the metric system, so that the pupils might be enabled to apply the metric system, shortly to be introduced generally. It was arranged to introduce decimal fractions not only in the upper but also in the middle grades. Of course, it was done in an elementary way. Reduction of common fractions to decimal fractions and addition and subtraction, partly also multiplication and division, of decimals were taught in the middle grades, while multiplication and division, reduction and the convenient uses of decimal fractions in practical problems were taught in the upper grades. Within a few years from the date mentioned it was found that problems in simple proportion with easy common and decimal fractions were not practiced enough. In order to test this conclusively, in the year 1882 a trial was held in each school, to which three pupils from each room were admitted. This trial confirmed the apprehension which dictated it, and more attention has since been given to routine exercises.

In geometry the old rules of 1873 are still in force, according to which this branch is taught by means of immediate observation, i. e., sense perception, and in close relation with instrumental drawing. In the upper grades instruction in geometry is separated from drawing, and embraces, besides plane geometry, mensuration of solid bodies. The treatment this branch receives is not the systematic method of Euclid, although several problems are treated as he treats them. All problems are brought into connection with circumstances from civil and industrial life—that is to say, they are not abstract and hypothetical, but concrete and practical exercises.

History: In order to secure good results of instruction in history in the upper grades, a guide was prepared for the Berlin city schools, in which information was given concerning aim, selection of matter, and method of teaching. A new stimulus was given to this branch by a ministerial order of May, 1889. According to this order the history of the Fatherland should (a) be continued to the date of the ascension of Emperor William II; (b) it should begin in the middle grades with pupils of 10 years of age, and not be confined to the upper grades (12

to 14 years); (c) it should dwell particularly in the upper grades upon the efforts the Prussian Kings have made in promoting the welfare of the people; (d) wherever a shortening of the course becomes imperative, it should not be done at the expense of modern history, but in that case a later historic date should be chosen for a beginning.

These new rules coming from the Royal Government necessitated a recast of the daily programmes in order to make room for the increase in history study, and also a rearrangement of the matter of instruction. As usual, conferences were held, and it was finally determined (1) that in the lower of the two middle classes instruction in history should be combined with geography; (2) that in the upper of the middle classes two hours per week of the instruction devoted to language should in future be devoted to history, with this provision that one and the same teacher should teach both branches; (3) in the girls' classes two of the hours hitherto devoted to female handiwork should be devoted to history. These changes, and the proposed distribution of the matter of historic study, were submitted to the Royal Government and approved June 20, 1891, without alteration.

Geography: Since history had been introduced into the middle grades, and since history can not be taught without accompanying instruction in geography, a change in the course of geography was found necessary, which was determined upon in 1892.

The "normal plan" of 1873 prescribed only twenty-eight hours per week for the middle grades of girls' schools; geography did not begin till the third grade was reached; in later years this was changed, so that two hours were added per week, and these were devoted to geography. The new plan of 1892 transfers some parts of the geography of Germany to the third grade and prescribes for the highest grade a review of the geography of Germany with special reference to commerce and industry, and also prescribes elements of mathematical geography.

Nature studies: The course in natural history was revised in the year 1880. The general outlines prescribed by the Royal Government is too sketchy to be followed in a graded school, nor did the Government intend to prescribe any more than outlines, expecting that each school system should carefully grade the matter of instruction to suit local needs and peculiarities of each section. The Berlin schools had to further divide the time assigned to natural history, inasmuch as the local course of study required physics, and since the distribution of the work was different for boys' and girls' schools, it became necessary to clearly define the limits of each branch.

The former "normal plan" required for natural history in boys' schools two hours per week in the two middle grades, two hours for the lower of the higher grades, and three hours for the highest grade. For girls' schools it had been the same, except that nature studies begin one year later.

With reference to the fact that instruction in physics should not be confined to the highest, but be taken up in the one below, and that botany should be taught in the summer, the following course was determined upon:

A. In boys' schools, beginning in the third year of the course, zoology in winter, botany in summer, two hours a week; physics in the grade below the highest in winter, two hours per week, while in summer the time between Easter and the summer vacation be devoted to botany. After the vacation till the close of fall, zoology should be given two hours per week. In the highest grade all through the year physics is to be favored with two hours a week, while natural history receives one hour a week, the year being divided to suit the requirements of that study.

B. In girls' schools the study of natural history begins one year later, and two hours a week are given to it. In the grade below the highest this study is continued, but it does not share its time with that devoted to physics, as in the boys' schools. In the highest grade in winter the girls study physics two hours a week; in spring, summer, and fall they continue their study of botany and zoology.

After this scheme was adopted, the inspectors, principals, and teachers decided what subjects should be taken up in the various grades, and they were selected with special reference to boys and girls. Observation of natural bodies and phenomena, demonstrations and experiments with suitable apparatus—in fact, the entire course in nature studies has of late years greatly changed in extent and interest, both among teachers and pupils.

Drawing: Since April, 1878, drawing has been extended to the lower grades, so that all grades from the lowest to the highest have instruction in drawing. Formerly it was done entirely by the class teachers; later, the most talented teacher in a school undertook to teach the drawing in all the grades of that school. The development with reference to method and plan of study remained a problem until in 1887 the minister of education published a guide for the teaching of drawing in the public schools of three or more grades. This guide caused a change in the course of the Berlin schools, since it shortened the course by beginning drawing in the second year instead of the first, thus giving back, in the first year, to language study the two hours hitherto devoted to drawing. Other changes were found unnecessary, since the plan followed in the city schools of Berlin was almost identical with the guide published by the minister, and thus proved that the authorities of Berlin had been in touch with the latest improvements in the study of drawing.

(The author here goes very much into details and touches upon textbooks and various methods in drawing, all of which may be here omitted, since many technical terms would be required, not generally understood.)

Singing: Concerning the position and treatment of instruction in singing in the city schools a number of lectures were delivered before the teachers, men and women, during the years 1877 and 1878. After several conferences concerning the number of church hymns to be learned, the royal authorities in 1889 determined their number to be 30. They were carefully selected and distributed among the six grades of the school.

Female handiwork: As early as the year 1840 the school authorities introduced this branch into the girls' schools, which had at that time only four grades. Eight hours per week was the time devoted to it. It was confined to knitting, darning, sewing, and marking linen. In the year 1850 this instruction was confined to the two upper grades. In 1853 a reorganization of that branch in the city schools was begun, and in 1854 it was determined to have it taught in the three upper grades. Four afternoons each week, between 2 and 4 o'clock, were devoted to female handiwork. The instruction aimed at skill in female occupations, without reference to the pupils' grading in other branches. For indigent pupils each school had a small fund to defray the expenses for obtaining material. Since 1863 an appropriation for all the schools for that purpose is regularly made by the central authorities.

In 1853 experienced women were called upon to inspect this instruction. Since 1860 the duties of these supervisory ladies were regulated by special instructions, and these instructions are still in force, but not applied vigorously, owing to the improved professional preparation of the teachers of that branch. Since 1858 a teacher of female handiwork has to prove her ability to teach that branch, a special city board of examiners granting certificates. In 1861 the communal schools had 49 of such teachers, who received a salary of 60 thalers each.

In 1872 instruction in female handiwork was regulated by ministerial decree, which made it an obligatory branch of the public school. Absence from the lessons in handiwork was punished as well as absence from other school lessons. Female handiwork extends over the four upper grades, with six hours per week. With the introduction of history in the middle grades of the girls' schools handiwork was curtailed by two hours. In order, however, not to let this branch suffer it was resolved to employ two teachers for each class at the same time.

From the irreducible funds of the former industrial schools the sum of 45,000 marks, or about \$11,000, has been set aside, the interest of which is used for prizes for diligent pupils in female handiwork. These prizes are not large, but they suffice to give an impulse to the study, especially since a private bequest of 1,500 marks per annum has increased the available means. The first prize may be as high as 125 marks in one half year. Pupils have the choice to either take the prize or have their expenses defrayed for three years. The first prizes were distributed in 1879 in consequence of a sewing test.

Gymnastics: Exercises in physical culture were introduced as early as 1854. At first only the recess and noon hour were devoted to these exercises, and Ling's system was followed. After a ministerial order of May, 1860, gymnastic exercises had been made an obligatory branch of the course in elementary schools. The Berlin city schools were at first provided with the required apparatus in the playgrounds. The arrangement of the yards and the preparation of teachers were given over to the care of a city gymnast, whose appointment was confirmed in 1864, and since 1877 the entire supervision of gymnastics in the city schools is left to him. Gymnastics properly so called began with two hours a week in the summer of 1862 for boys in the middle and upper grades of twenty-two schools. In the winter it had to be abandoned, because the apparatus was not under roof, but since that time every new schoolhouse built has been provided with a suitable gymnastic hall. The older ones of these halls were really only sheds, that is, roofs supported by columns, but later ones were built with walls. Since October, 1868, gymnastics were continued all through the winter, and in 1876 thirty-one commodious and spacious gymnastic halls were in use.

The chief gymnast prepared the teachers of gymnastics in accordance with the guide published by the minister of education for Prussian schools. The teachers are paid 1.50 marks per hour.

In girls' schools gymnastic exercises are conducted according to Spiess's method, and in October, 1876, forty-two classes received regular instruction. As the school system developed and better school-rooms and gymnastic halls were provided for, this branch was made to share in the general improvement. A new course for girls' gymnastics was prepared by Schettler in 1883, and officially adopted.

Up to the year 1889 instruction in gymnastics extended only over the middle and upper grades of the school. The faulty positions of school children in the lower grades when writing at their desk led to the introduction of gymnastics in the lower grades also, so that at present gymnastics is a regular branch of the course for all the grades. In the lower grades it is confined to suitable exercises in calisthenics and marching. Gymnastics on apparatus is confined to the middle and upper grades. Though the number of gymnastic halls greatly increased in course of time, the number of classes to be accommodated grew faster, so that it is necessary often to accommodate two classes in one hall. The year 1893 saw the completion of the ninety-first gymnastic hall connected with elementary schools.

Besides gymnastics, the play of the children is carefully observed and supervised, playgrounds for the children attending school are set aside in both the Friedrichs and Humboldtshain in the Treptow Park and the Tempelhofer Field. The children congregate there at specially designated hours in summer and go through a number of games and plays conducted by the teachers. Similar efforts are made in the playgrounds of the city schools.

Domestic instruction: The society for the welfare of children who have passed through the schools petitioned the magistrate in 1893 for the use of suitable rooms in the school buildings for the purpose of giving instruction in domestic science to girls during the last school year. The magistrate, with the sanction of the chamber of deputies or city council, granted the request and placed at the disposal of the society suitable rooms in several new schoolhouses. Instruction began in the winter of 1893. Since this branch is not obligatory, it is taught only on afternoons not occupied by school work. The girls who choose to enter these classes are excused from attendance upon lessons in handiwork for two hours per week. The attempt has proven eminently satisfactory and a motion to continue and extend this department has been made, and is likely to be supported by the authorities.

School gardens: The fact that it becomes more and more difficult in a metropolis to provide for the necessary number of plants for instruction in botany led to the establishment of a school garden in 1869. The commission of parks and gardens was authorized to arrange it, and in the year 1875 the first plants were distributed among six schools. During the following year forty-nine schools could be supplied, and ever since 1877 every public school of Berlin is regularly supplied. Since 1881 the private schools of the city are also supplied, as well as the royal institutions, if they pay a small sum of \$10 to \$20 per year for 100 or 200 plants or cuttings twice a week.

During the summer at 6 o'clock in the morning two large wagons start from the school garden loaded with cuttings packed and labeled, which are delivered to the different schools. All the city schools are divided into three groups, each group receiving its cuttings on two days, the lessons in botany being arranged accordingly. Every packet contains one species. On an average every city school receives four different species, in secondary schools six species, per week. Every packet has between 150 and 190 cuttings. During vacation, of course, the supply ceases. In order that the superabundance in summer be not followed by a scanty supply in the fall, annuals are chiefly raised, and it is done so early that the blossoms are obtained long before the very hot season sets in. This is necessary, owing to the fact that the plants have to be cut on the evening previous to their delivery. In order to acquaint the teachers with what they may expect from the school garden during the following week, the daily papers have regular announcements, and since 1887 a list of the plants raised is submitted to the special teachers, who consult with the gardeners as to what may or ought to be sowed or planted. Teachers in botany are permitted to take their classes into the school gardens and give a lesson in the open air, where they are aided by the gardeners who cut the specimens.

But the plants thus placed at the disposal of the teachers are not the only ones observed and studied, for the playgrounds of every school has flower beds; shrubbery and trees are maintained which offer

opportunity for observation, and pot plants kept by teachers and pupils give aid in the same direction. All these arrangements for a rational teaching of botany have proven eminently beneficial.

(8) *Continuation of teachers' studies.*—If the common school has a thoroughly prepared corps of teachers it would seem sufficient to secure success, but the demands each branch of instruction makes are so great that only a continuous occupation and study will make it possible to completely master them and thus secure the success in the schoolroom which is so much to be desired. Teachers must have opportunities, besides those commonly offered in the metropolis, for self-culture, the extent and direction of which meets the desires and the free determination of the individual. The authorities have felt this and have been ready to meet the demand. Teachers' libraries and the city school museum, with its valuable collection of books and appliances for teaching, are open for teachers of both sexes. Then there are regular continuous courses and scientific lectures, for which the city government cheerfully defrays the expenses. Special opportunity is given for study in the natural sciences in the school garden, the urania, the zoological garden, and the aquarium.

The city school museum has occupied the session room of the seventy-second common school since 1877. It contains a library of about 13,000 bound books, has an annual appropriation of \$1,000 for the purchase of new books, which are selected from new publications on the theory and practice of teaching. Private bequests have increased the stock of appliances and the collection of objects for natural history study, as well as the physical apparatus, which collections are very valuable. The books and collections are open for inspection and use on Saturdays between 3 and 6 and on Sundays until 1 p. m.; books may be obtained also on Wednesday between 3 and 4 p. m. The number of books borrowed and returned, as well as the number of visitors, has grown from year to year. In this museum the continuous lecture courses for young teachers are held.

Other courses, such as for drawing, have been held ever since the year 1874, and since 1880 the drawing from solids has been made a special feature; these courses are given in the school for artisans.

The school inspectors have held, since 1878, a great number of professional conferences or teachers' meetings, each one in his district. All the branches of instruction have been treated extensively with reference to matter and method, and since 1879 there have been added scientific lectures on mathematics, physics, history, and literature, which lectures are gratuitous and attended by a great number of zealous teachers. Under the presidency of the chief gymnast of the city a conference of gymnastic teachers is held during every term.

Side by side with all these institutions for self-culture, there are a number of private institutions maintained by the Berlin Teachers' Association; lecture courses, for instance, and a separate school museum.

CONCLUSION.

The foregoing memorial was intended to show the main features of the development of the Berlin common school system during the last fifteen years. It has considered only the primary or elementary schools, and left entirely out of consideration, as not germane to the question, all the other city schools devoted to secondary instruction, nor has it touched upon the city institutions for the blind, deaf-mutes, orphans, and idiots, nor the reform schools. All these institutions, numerous as they are, lie outside the subject under consideration.

From the facts given—and naturally this memorial deals with facts only—anyone may form an opinion concerning the institutions called the “Berlin common schools.” It is easily seen that the entire population nurses and loves its favorite child, the common school, and holds its protecting hand over it, so that it may grow steadily. Yet no one within or without these schools will deny that there is still room for improvement in various directions.

At present very essential questions are laying claims to the attention of the school administration. Especially pressing are the questions of internal development. The present organization of six ascending grades has during thirty years been able to furnish secondary schools with but a small fraction of pupils. Most of these latter institutions have elementary and preparatory schools of their own. How to do away with these and raise the elementary school to such a degree, that they may be the preparatory institutions for secondary schools, is one of the burning questions.

The organization of schools with more than six grades is one of the means of raising the standard of education with the great mass of the population. A school organization is the better the greater the percentage of population it accommodates, and the greater the number of children who pass through all the grades of the school from the lowest to the highest, and thus obtain an education for life commensurate with the demands of our modern time. This is best attained by reducing the size of the school and by a better grading. Organization, quality of pupils, and the number of pupils are in closest correlation. Equalization in attainments is best secured by grading the children into eight grades analogous to their ages from 6 to 14. A recent resolution of the central school committee has added one grade to the already existing six grades, by dividing the sixth into two grades. But a better grading is likely to follow in the near future.

We conclude this memorial with the words of the annual report of 1876, which, though published nearly twenty years ago, are still applicable:

It is the intention to establish over the entire city a complete net of elementary schools organized alike, large enough to admit all the children of the city gratuitously, and effective enough to deserve the general confidence of the population; a system of local school boards extending over all the districts, and consisting of citi-

zens who act without pay, being acquainted with their neighbors, and who will insist upon the children fulfilling the duty of attending school, tolerating no unnecessary absence; a central school committee ("central administration") endowed with authority and provided with all the necessary technical assistants so as to meet the needs of schools in every part of the city, as soon as they arise; and lastly, a corps of teachers thoroughly prepared, faithful to duty, and with devotion to the profession of teaching, breathing life into the elementary institutions of learning.

That was, and is still, the intention, and it will remain an object of solicitude among all the strata of society in the city of Berlin.

TABLE 1.—*Growth of the common school system from 1878 to 1893.*

	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.
School districts.....	6	6	6	8	8	8	3	8
School inspection districts.....	16	16	16	16	16	16	16	16
Local school boards.....	88	88	88	88	88	88	88	130
Members of local boards.....	1,003	1,022	1,231	1,280	1,285	1,350	1,400	1,464
City common schools.....	104	106	114	121	128	137	146	156
Class rooms in common schools.....	1,457	1,506	1,742	1,899	2,094	2,253	2,420	2,587
Children:								
In common schools.....	79,630	86,995	94,067	103,191	113,485	123,127	132,889	143,597
Protestant.....	74,721	81,469	87,874	96,284	105,621	114,467	123,229	133,011
Catholic.....	3,958	4,458	4,894	5,338	5,960	6,494	7,128	7,837
Jewish.....	771	908	1,130	1,355	1,596	1,817	2,055	2,269
Dissenting.....	180	160	169	214	308	349	407	480
Schoolhouses owned by city.....	88	98	98	99	108	110	112	123
Schools in rented quarters.....	16	17	22	22	20	27	33	32
Schools in other city buildings.....							1	1
Classes in schoolhouses owned by city.....	1,264	1,311	1,378	1,462	1,674	1,733	1,774	1,984
Classes in rented quarters.....	192	275	355	391	384	454	532	536
Classes with half-day sessions.....	1	10	9	46	36	66	114	67
Private schools with children for which the city paid.....	2	2	2	2	2	2	2	2
Classes in such private schools.....	24	24	24	24	24	24	24	24
Children in such private schools.....	1,390	1,522	1,565	1,535	1,523	1,514	1,522	1,439
Newly built city schoolhouses.....	5	2	8	7	7	9	9	10
Classes in the new buildings.....	99	139	146	157	195	150	167	167

	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.
School districts.....	8	8	8	8	8	8	10	10
School inspection districts.....	16	16	16	16	16	16	16	16
Local school boards.....	130	130	130	150	151	152	160	168
Members of local boards.....	1,500	1,530	1,660	1,670	1,682	1,700	1,829	1,972
City common schools.....	163	171	177	183	185	191	196	201
Class rooms in common schools.....	2,745	2,861	2,963	3,060	3,141	3,223	3,271	3,370
Children:								
In common schools.....	151,594	158,183	164,515	169,315	172,408	175,675	177,037	180,252
Protestant.....	140,224	145,882	151,564	155,845	158,234	161,057	162,004	165,000
Catholic.....	8,382	9,011	9,458	9,937	10,467	10,782	11,188	11,500
Jewish.....	2,495	2,765	2,970	3,071	3,137	3,208	3,230	3,230
Dissenting.....	493	525	523	462	570	628	665	665
Schoolhouses owned by city.....	133	142	152	158	170	176	184	189
Schools in rented quarters.....	29	28	24	24	14	14	11	11
Schools in other city buildings.....	1	1	1	1	1	1	1	1
Classes in schoolhouses owned by city.....	2,160	2,311	2,455	2,563	2,765	2,878	3,024	3,105
Classes in rented quarters.....	494	495	402	389	256	265	198	185
Classes with half-day sessions.....	91	55	106	108	120	90	49	80
Private schools with children for which the city paid.....	1	1	1	1	1	1	1	1
Classes in such private schools.....	12	12	12	12	12	12	12	12
Children in such private schools.....	750	773	783	784	775	775	775	775
Newly built city schoolhouses.....	7	8	6	6	2	6	5	5
Classes in the new buildings.....	158	116	102	97	81	82	48	99

TABLE 2a.—Increase in population of Berlin.

At close of year—	Popula- tion.	In- crease.	Births.	Increase in chil- dren of school age.	At close of year—	Popula- tion.	In- crease.	Births.	Increase in chil- dren of school age.
1872	864,300	39,817	35,532	.....	1883	1,226,392	34,319	45,938	9,308
1873	900,620	36,320	36,159	3,212	1884	1,263,196	36,804	46,400	9,747
1874	932,760	32,140	40,216	3,900	1885	1,315,613	52,417	46,975	11,823
1875	964,240	31,480	43,758	5,344	1886	1,362,455	46,842	47,599	6,554
1876	995,470	31,230	46,266	6,295	1887	1,413,603	51,148	48,914	6,822
1877	1,024,193	28,723	45,875	3,467	1888	1,470,231	56,628	49,796	6,058
1878	1,054,701	30,508	45,861	4,988	1889	1,526,045	55,814	50,845	4,529
1879	1,089,070	34,369	46,065	6,081	1890	1,579,980	53,935	51,899	2,834
1880	1,123,680	34,610	45,868	6,299	1891	1,624,313	44,333	51,924	3,064
1881	1,156,382	32,702	45,246	9,371	1892	1,656,698	32,385	52,442	1,185
1882	1,192,073	35,691	46,268	10,512					

TABLE 2b.—Increase in school population of Berlin.

BOYS AND GIRLS IN ALL THE SCHOOLS OF BERLIN, ELEMENTARY AND SECONDARY,
PUBLIC AND PRIVATE.

Year.	Total.	Children of school age (6 to 14).	Per cent of the population—		Year.	Total.	Children of school age (6 to 14).	Per cent of the population—	
			Of num- ber in school.	Of num- ber of school age.				Of num- ber in school.	Of num- ber of school age.
1872	95,275	87,966	11.03	10.18	1883	169,725	156,744	13.84	12.78
1873	98,545	91,179	10.94	10.12	1884	179,607	166,491	14.22	13.18
1874	103,158	95,079	11.07	10.20	1885	190,474	178,314	14.48	13.56
1875	108,904	100,423	11.29	10.41	1886	198,173	184,868	14.54	13.56
1876	115,154	106,718	11.57	10.72	1887	205,604	191,690	14.54	13.56
1877	119,781	110,185	11.70	10.76	1888	212,205	197,748	14.43	13.45
1878	125,599	115,173	11.91	10.92	1889	217,698	202,277	14.27	13.26
1879	132,912	121,254	12.20	11.13	1890	221,216	205,111	14	12.98
1880	139,934	127,553	12.45	11.35	1891	224,572	208,165	13.83	12.62
1881	149,091	136,924	12.89	11.84	1892	225,923	209,350	13.64	12.64
1882	159,814	147,436	13.41	12.37					

TABLE 2c.—Increase in attendance of common schools.

CHILDREN TAUGHT AT THE EXPENSE OF THE CITY, IN PUBLIC AND PRIVATE
SCHOOLS.

Year.	Total.	Children of school age (6 to 14).	Per cent of the population—		Year.	Total.	Children of school age (6 to 14).	Per cent of the population—	
			Of num- ber in school.	Of num- ber of school age.				Of num- ber in school.	Of num- ber of school age.
1872	54,400	53,973	6.29	6.24	1883	124,641	122,098	10.16	9.96
1873	56,127	55,589	6.23	6.17	1884	134,411	131,933	10.64	10.44
1874	59,767	59,182	6.40	6.34	1885	145,036	142,982	11.02	10.87
1875	64,882	65,279	6.73	6.67	1886	152,344	149,514	11.18	10.97
1876	70,190	69,554	7.05	6.90	1887	158,956	156,053	11.24	11.03
1877	75,127	74,269	7.33	7.25	1888	165,298	162,230	11.24	11.03
1878	81,133	79,981	7.69	7.58	1889	170,099	166,619	11.15	10.92
1879	88,628	86,832	8.13	7.97	1890	173,183	169,681	10.95	10.73
1880	95,572	93,591	8.51	8.33	1891	175,675	171,994	10.82	10.59
1881	104,720	102,655	9.06	8.88	1892	177,087	173,338	10.69	10.46
1882	115,008	112,863	9.66	9.48					

TABLE 3.—*Number of children born and enrolled.*

In the year—	Entered or will enter the children born in—	Leave school, children born in—	Number of children born.	Difference.	Actual increase in public schools.
1882	1876	1888	46,266	17,435	10,512
1883	1877	1889	28,831		
1884	1878	1890	45,875	16,683	9,308
1885	1879	1870	29,192		
1886	1880	1871	45,861	14,499	9,747
1887	1881	1872	31,362		
1888	1882	1873	46,065	17,260	11,823
1889	1883	1874	28,805		
1890	1884	1875	45,880	10,340	6,554
1891	1885	1876	35,532		
1892	1886	1877	45,246	9,078	6,822
1893	1887	1878	30,159		
1894	1888	1879	46,268	6,052	6,058
1895	1889	1880	40,216		
1896	1890	1881	45,938	2,180	4,529
1897	1891	1882	43,758		
1898	1892	1883	46,400	134	2,834
		1884	46,266		
		1885	46,975	1,100	3,054
		1886	45,875		
		1887	47,599	1,738	1,185
		1888	45,861		
		1889	48,914	2,849	(1)
		1890	46,065		
		1891	49,706	3,928	(1)
		1892	45,868		
		1893	50,845	5,599	(1)
		1894	45,246		
		1895	51,899	5,631	(1)
		1896	46,288		
		1897	51,924	5,986	(1)
		1898	45,938		
		1899	52,442	6,042	(1)
		1900	46,400		

TABLE 4.—*Expenditures for new school buildings between 1878 and 1893.*

Year.	New buildings.	Enlarging old buildings.	Year.	New buildings.	Enlarging old buildings.
	<i>Marks.</i>	<i>Marks.</i>		<i>Marks.</i>	<i>Marks.</i>
1878	177,825.86		1888	2,041,133.03	13,747.15
1879	162,156.88		1889	2,145,491.15	
1880	554,262.31	65,406.78	1890	2,802,457.32	7,528.84
1881	772,257.62		1891	1,894,790.77	33,268.04
1882	2,362,973.78	60,280.93	1892	2,260,234.93	
1883	241,645.30	22,205.69	1893	1,249,948.61	63,371.29
1884	643,325.30	34,854.09			
1885	2,734,731.54		Total	23,941,512.18	311,322.61
1886	2,201,528.56		Or	\$5,698,079.86	\$74,094.78
1887	1,696,729.22	10,659.80			

TABLE 5.—*Classes and percentage of children taught in schoolhouses owned by the city between 1878 and 1893.*

Year.	Classes.	Per cent of total number of children.	Year.	Classes.	Per cent of total number of children.
1878	1,273	86.89	1886	2,160	78.70
1879	1,330	82.87	1887	2,314	80.00
1880	1,387	79.62	1888	2,445	82.20
1881	1,508	79.41	1889	2,563	83.75
1882	1,710	81.66	1890	2,765	88.30
1883	1,733	82.81	1891	2,868	88.37
1884	1,774	79.93	1892	3,024	92.17
1885	1,984	76.00			

TABLE 6.—*Expenditures of the city, exclusive of those for buildings, between 1878 and 1893.*

Year.	Expenditure.	Increase over last year.	Per capita of children enrolled.	Year.	Expenditure.	Increase over last year.	Per capita of children enrolled.
	<i>Marks.</i>	<i>Marks.</i>	<i>Marks.</i>		<i>Marks.</i>	<i>Marks.</i>	<i>Marks.</i>
1877-78.....	3, 670, 988	267, 596	48. 60	1886-87.....	7, 124, 022	410, 952	48. 73
1878-79.....	3, 890, 668	219, 680	48. 00	1887-88.....	7, 408, 229	284, 207	46. 62
1879-80.....	4, 231, 408	340, 740	47. 83	1888-89.....	7, 688, 641	280, 412	46. 53
1880-81.....	4, 607, 343	435, 935	48. 89	1889-90.....	8, 102, 582	413, 941	47. 65
1881-82.....	5, 019, 689	352, 346	47. 99	1890-91.....	8, 302, 381	199, 799	47. 95
1882-83.....	5, 435, 884	416, 195	47. 33	1891-92.....	8, 901, 603	600, 203	50. 62
1883-84.....	5, 801, 776	365, 892	46. 58	1892-93.....	9, 191, 327	289, 634	51. 84
1884-85.....	6, 255, 090	453, 314	46. 58				
1885-86.....	6, 713, 070	457, 980	46. 30	Averages..	6, 400, 300	365, 926	a 47. 88

a Equals \$11. 40.

TABLE 7.—*Comparative data concerning the common schools of Berlin for the two years 1886 and 1891.*

[From the Prussian State reports of those years.]

	1886.		1891.	
	Marks.	Per cent.	Marks.	Per cent.
Total cost of maintenance.....	8, 388, 767		11, 090, 005	
For salaries.....	4, 493, 514	58. 93	6, 360, 289	57. 35
For buildings and incidentals.....	3, 445, 253	41. 07	4, 728, 716	42. 65
Defrayed by city.....	8, 324, 229	99. 23	10, 212, 814	92. 09
Defrayed by State.....	37, 917	. 45	877, 191	7. 91
Raised from tuition fees.....	26, 421	. 32		
Per capita of population.....	6. 38 or \$1. 52		7. 02 or \$1. 67	

Per capita in 1878, 5.50 marks (\$1.31); in 1871, 3.49 marks (84 cents); in 1867, 3.31, marks (78 cents); in 1861, 1.33 marks (32 cents).

	1878.	1886.	1891.
	<i>Marks.</i>	<i>Marks.</i>	<i>Marks.</i>
Average expenditure for one common school.....	45, 848	50, 535	57, 761
Average expenditure for salaries.....	51, 782	29, 780	33, 127
Average expenditure for buildings.....	14, 066	20, 755	24, 634
Per capita of pupils.....	50. 75 = \$12. 08	55. 51 = \$13. 21	63. 15 = \$15. 03

	1878.	1891.
	<i>Marks.</i>	<i>Marks.</i>
Average salary for men.....	2, 375 = \$565. 25	2, 597 = \$618. 08
Average salary for women.....	1, 457 = \$366. 77	1, 538 = \$386. 04

Pensions paid to men in 1891.....	<i>Marks.</i>
Pensions paid to women in 1891.....	100, 402 = \$23, 895. 68
Total.....	19, 896 = 4, 735. 25
	120, 298 = 28, 630. 93

TABLE 8.—Time tables of the Berlin common schools used in 1840, 1860, 1873, and 1893.

A.—1840.

[The schools having four grades, grade 1 being the highest.]

Branches of instruction.	Hours per week for boys.				Hours per week for girls.			
	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 1.	Grade 2.	Grade 3.	Grade 4.
Religion	6	6	6	6	6	6	4	4
Reading	4	6	10	10	4	4	7	8
German language and orthography	6	4			2	2		
Penmanship	4	4	4	4	4	4	3	2
Arithmetic	4	4	4	4	4	4	3	3
Geometry	2	2						
National and universal history	4	4			2	2	1	1
Singing	2	2	2	2	2	2	8	8
Female handiwork					8	8	8	8
Total	32	32	26	26	32	32	26	26

In 1850 the course for boys was changed so as to read for "national and universal history," 4 hours, as follows: History, 2 hours; knowledge of nature (in summer), 2 hours, and geography, 2 hours (in winter). For girls the course was changed to read "geography" instead of "universal history."

B.—1860.

[The schools having six grades, grade 1 being the highest.]

Branches of instruction.	Hours per week for boys.						Hours per week for girls.					
	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.
Religion	6	6	6	6	6	6	6	6	6	6	6	6
Reading and language	8	10	8	10	10	10	6	6	8	10	10	10
Writing	4	4	4	4	4	4	3	4	4	4	4	4
Arithmetic	4	4	4	4	4	4	3	4	4	4	4	4
Geometry and drawing	4	2										
Nature study	2	2					2					
History and geography	2	2	2				2	2				
Singing	2	2	2	2	2	2	2	2	2	2	2	2
Female handiwork							8	8	8			
Total	32	32	26	26	26	26	32	32	32	26	26	26

C.—1873.

[The schools having six grades, grade 1 being the highest.]

Religion	4	4	4	4	4	4	4	4	4	4	4	4
German (2 hours' object lessons in grades 5 and 6)	8	8	10	10	12	12	6	6	8	10	12	12
Arithmetic	4	4	4	4	4	4	4	4	4	4	4	4
History	2	2					2	2				
Geography (home geography in grade 4)	2	2	2	2			2	2	2			
Nature study	3	2	2	2			2	2	2			
Geometry	3	2										
Drawing	2	2	4	2			2	2	2	2		
Singing	2	2	2	2	2	2	2	2	2	2	2	2
Gymnastics	2	2	2	2								
Female handiwork							8	8	8	8		
Total	32	30	30	28	22	22	32	32	32	28	22	22

TABLE 8.—*Time tables of the Berlin common schools used in 1840, 1860, 1873, and 1893—Continued.*

D.—1893.

[Though the course prescribes six grades, many schools have seven. See Text.]

Branches of instruction.	Hours per week for boys.						Hours per week for girls.					
	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.
Religion	4	4	4	4	4	4	4	4	4	4	4	4
German (2 hours object lessons in grades 5 and 6)	8	8	8	10	9	11	6	6	8	8	9	11
Arithmetic	4	4	4	4	4	4	4	4	4	4	4	4
History	2	2	2	2	2	2	2	2	2	2	2	2
Geography (home geography in grade 4)	2	2	2	2	2	2	2	2	2	2	2	2
Nature study (physics in grade 1)	3	3	3	2	2	2	2	2	2	2	2	2
Geometry (mensuration in grade 3)	3	3	3	2	2	2	2	2	2	2	2	2
Drawing	2	2	2	2	2	2	2	2	2	2	2	2
Singing	2	2	2	2	1	1	2	2	2	2	1	1
Gymnastics	2	2	2	2	2	2	2	2	2	2	2	2
Female handiwork							6	6	4	4		
Total	32	30	30	28	22	22	32	32	32	28	22	22

TABLE 9.—*Distribution of the school children according to age. (Year 1892.)*

Grade.	Number of classes.	Attendance Decem-ber 21, 1892.	They were born in—											
			1887—under 6.	1886—6 to 7.	1885—7 to 8.	1884—8 to 9.	1883—9 to 10.	1882—10 to 11.	1881—11 to 12.	1880—12 to 13.	1879—13 to 14.	1878, over 14.	1877, over 14.	
BOYS.														
1	226	9,359						12	1,038	2,903	4,666	919	21	
2	264	12,484					17	1,680	3,507	3,653	3,066	539	2	
3	277	14,770				32	2,590	4,607	3,540	2,395	1,363	241	2	
4	293	16,435			24	3,954	5,662	3,537	1,814	912	436	65	1	
5	274	16,048		20	5,799	6,322	2,779	1,088	395	165	65	7	2	
6	289	17,785	16	9,132	6,604	1,497	361	104	32	26	13			
Total	1,623	87,461		16	9,158	12,427	11,805	11,409	11,028	10,326	10,084	9,409	1,771	28
GIRLS.														
1	222	9,438							820	2,885	4,666	1,028	9	
2	261	12,877					8	1,459	3,534	3,972	3,342	554	3	
3	288	15,198				10	2,122	4,544	3,930	2,669	1,652	271		
4	307	17,404			10	3,562	5,914	4,130	2,137	1,070	510	71		
5	281	16,946		7	5,363	6,736	3,009	1,215	419	133	53	10	1	
6	289	17,763	5	8,581	7,043	1,623	343	102	36	16	11	3		
Total	1,648	89,626		5	8,538	12,416	11,931	11,396	11,450	10,876	10,745	10,269	1,937	13
Grand total.	3,271	177,087		21	17,746	24,843	23,736	22,805	22,478	21,202	20,829	19,678	3,708	41

TABLE 10.—*Distribution of the pupils born in 1878, showing the absolute numbers and percentages.*

Grade.	6 to 7 years old, first school year 1884.		7 to 8 years old, second school year 1885.		8 to 9 years old, third school year 1886.		9 to 10 years old, fourth school year 1887.		10 to 11 years old, fifth school year 1888.	
	Num- ber.	Per cent.	Num- ber.	Per cent.	Num- ber.	Per cent.	Num- ber.	Per cent.	Num- ber.	Per cent.
BOYS.										
1									10	.13
2							26	.24	1,525	14.41
3					45	.41	2,318	21.59	4,383	41.40
4			58	.54	3,361	30.73	5,326	48.97	3,453	32.63
5	21	.30	4,609	43.11	6,056	55.37	2,780	25.64	1,087	10.27
6	7,032	99.70	6,022	56.35	1,476	13.40	387	3.56	117	1.11
Total	7,051	100.00	10,689	100.00	10,938	100.00	10,876	100.00	10,584	100.00
GIRLS.										
1									7	.06
2							10	.90	1,243	11.11
3					14	.12	1,774	15.93	4,314	38.56
4			20	.18	2,646	23.55	5,617	50.44	4,208	37.61
5	9	.13	3,883	35.18	6,697	59.61	3,342	30.01	1,306	11.67
6	6,459	99.87	7,136	64.64	1,878	16.72	393	3.53	111	.99
Total	6,468	100.00	11,039	100.00	11,235	100.00	11,136	100.00	11,189	100.00
Grand total	13,521		21,728		22,173		32,012		21,773	

Grade.	11 to 12 years old, sixth school year 1889.		12 to 13 years old, seventh school year 1890.		13 to 14 years old, eighth school year 1891.		Over 14 years, ninth school year 1892.		Total.
	Num- ber.	Per cent.	Num- ber.	Per cent.	Num- ber.	Per cent.	Num- ber.	Per cent.	
BOYS.									
1	961	9.22	2,926	28.33	4,450	46.26	919	51.89	9,275
2	3,448	33.10	3,696	35.78	3,147	32.71	539	30.43	12,381
3	3,618	34.74	2,560	24.78	1,501	15.60	241	13.61	14,696
4	1,957	18.82	985	9.54	472	4.91	65	3.67	15,677
5	385	3.70	145	1.40	48	.50	7	.40	15,147
6	45	.42	18	.17	2	.02			15,094
Total	10,414	100.00	10,330	100.00	9,620	100.00	1,771	100.00	
GIRLS.									
1	756	6.81	2,886	25.83	4,654	44.89	1,028	53.07	9,333
2	3,319	29.89	4,018	35.96	3,395	32.74	554	28.60	12,539
3	4,189	37.72	2,957	26.46	1,729	16.67	271	13.99	15,248
4	2,351	21.17	1,127	10.08	518	5.00	71	3.66	16,553
5	445	4.01	172	1.54	64	.62	10	.52	15,928
6	46	.40	15	.13	8	.08	3	.16	16,059
Total	11,106	100.00	11,175	100.00	10,368	100.00	1,037	100.00	
Grand total	21,520		21,505		19,988		3,708		

ATTENDANCE IN SECONDARY SCHOOLS FOR BOYS IN GERMANY.

In an appendix to the exposé on the universities in Germany, the annual report of this Bureau for 1891-92 contained a summary (p. 368) which has served as a basis for comparisons with other States. The imperial secretary of state at Strasburg, Dr. George von Mayr, a noted statistician, subjects the sources of that table, published by Prof. Dr. C. Rethwisch for the Chicago World's Fair, to a criticism which reveals most interesting details, and he brings out features of secondary school attendance in Germany which are particularly welcome in this country at a time when high schools and colleges are taking an inventory of good intentions and results.

In presenting this statistical material it is necessary to reiterate that the tables show only the number of boys studying in secondary schools, not of girls. The boys in Germany who are predestined by their parents to pursue higher studies must begin at an early age—say at 10 or 11 years. For girls who aim at entering upon higher studies, ample provision in the form of public preparatory secondary schools is not made as yet in Germany, though there are numerous private institutions of that kind. Efforts are being made of late to establish public gymnasia, or classical schools, for girls, and the Government has the question under advisement. Dr. Mayr, in summarizing the material furnished by each State, arrives at the following totals for the year 1890:

	Boys.
"Gymnasia," or classical schools.....	134, 845
"Real schools," with Latin.....	50, 947
"Real schools," without Latin.....	62, 579
Total	248, 371

This is about 3 per cent of the school-going population.

The separate States show remarkable differences in the attendance in the three classes of schools. While in Prussia and in Bavaria the classical schools have still the majority of students, States like Saxony, Württemberg, Baden, and Hessen display an opposite tendency.

The confessions or religions of the students are mentioned separately, both in totals and in ratios, as is seen from the following paragraphs. The numbers are not quite correct, owing to the fact that two States make no returns concerning the denomination of their students.

Germany has 1 student in secondary schools to every 199 of its inhabitants; that is, 1 Protestant student to every 181 Protestant inhabitants; 1 Catholic student to every 307 Catholic inhabitants; 1 student of other Christian confessions to 204 of such inhabitants; 1 Jewish student to every 30 Jewish inhabitants. A computation of the attendance in the three categories of schools with reference to the religion or confession can be made only by leaving out the numbers from Württemberg and Oldenburg. The result is as follows:

Attendance in secondary schools in Germany, 1890.

States.	Gymnasia or classical schools for boys.					"Real schools," with Latin, for boys.				
	Pro- tes- tants.	Catho- lics.	Other Chris- tians.	Jews.	Total.	Pro- tes- tants.	Catho- lics.	Other Chris- tians.	Jews.	Total.
Prussia.....	54,038	19,539	149	7,253	80,979	26,788	4,687	146	2,844	34,465
Bavaria.....	5,738	11,418	32	814	18,002	245	140		61	452
Saxony.....	5,333	121	13	169	5,636	3,002	78	10	46	3,136
Württemberg.....	(?)	(?)	(?)		6,453	(?)	(?)	(?)	(?)	1,972
Baden.....	2,092	2,089	8	404	4,583	1,732	1,246	5	392	3,381
Hessen.....	1,577	567	22	241	2,407	802	179	15	87	1,083
Mecklenburg-Schwerin.....	1,378	11		33	1,422	1,372	5		30	1,407
Saxe-Weimar.....	703	14		18	735	489	6		21	516
Mecklenburg-Strelitz.....	545	2		18	565	212	1		1	214
Oldenburg.....	(?)	(?)	(?)	(?)	911					
Brunswick.....	1,674	18		27	1,719	325	4	1	8	338
Saxe-Meiningen.....	261	2		23	286	305	1		13	319
Saxe-Altenburg.....	505	1			506	192	1			193
Saxe-Coburg.....	281	10	1	19	311	233	7		11	261
Saxe-Gotha.....	327	2		11	340	90	1			91
Anhalt.....	930	0		28	964	436	7		20	463
Schwarzburg-Rudolstadt.....	149	1		1	151	226	2		1	229
Schwarzburg-Sondershausen.....	331	4		5	340	349	2	3	6	360
Waldeck.....	149	5		13	167	93	1		6	100
Reuss, senior.....	157	2		2	161	37				37
Reuss, junior.....	305			1	306	394	4		2	400
Schaumburg-Lippe.....	193	6		9	208	38			5	43
Lippe.....	361	17		25	403	34	5		2	41
Lübeck.....	530	3		18	551	117			1	118
Bremen.....	784	18	1	13	816	592	15		13	620
Hamburg.....	830	14	14	142	1,000	631	11	2	74	718
Alsace-Lorraine.....	2,034	2,544	1	334	4,913					
German Empire: Total.....					134,845					50,947
Without Oldenburg.....					133,934					50,947
Without Oldenburg and Württemberg.....	81,205	36,414	241	9,621	127,481	38,734	6,409	182	3,650	48,975

States.	"Real schools," without Latin, for boys.					Total.				
	Pro- tes- tants.	Catho- lics.	Other Chris- tians.	Jews.	Total.	Protes- tants.	Catho- lics.	Other Chris- tians.	Jews.	Total.
Prussia.....	14,558	3,218	104	2,013	19,893	95,384	27,444	399	12,110	135,337
Bavaria.....	4,531	5,227	69	1,131	10,958	10,514	16,791	101	2,006	29,412
Saxony.....	4,839	102	3	118	5,062	13,174	301	26	333	13,834
Württemberg.....	6,919	1,269	9	396	8,593	13,002	3,255	28	733	17,018
Baden.....	1,333	952	9	319	2,613	5,157	4,287	22	1,121	10,587
Hessen.....	2,031	705	41	515	3,292	4,410	1,451	78	843	6,782
Mecklenburg-Schwerin.....	560	2	1	9	572	3,310	18	1	72	3,401
Saxe-Weimar.....	533	12	6	4	555	1,725	32	6	43	1,806
Mecklenburg-Strelitz.....										
Oldenburg.....	459	11		20	490	757	3		19	779
Brunswick.....	1,302	16		244	1,562	3,301	38	1	279	3,619
Saxe-Meiningen.....	203				203	769	3		36	808
Saxe-Altenburg.....	102	1		2	105	799	3		2	804
Saxe-Coburg.....						514	17	1	30	562
Saxe-Gotha.....	442	7	2	21	472	856	10	2	32	903
Anhalt.....	184	2		7	193	1,550	13		55	1,620
Schwarzburg-Rudolstadt.....						375	3		2	380
Schwarzburg-Sondershausen.....						680	6	3	11	703
Waldeck.....						242	6		19	267
Reuss, senior.....						194	2		2	198
Reuss, junior.....						699	4		3	706
Schaumburg-Lippe.....						231	6		14	251
Lippe.....						395	22		27	444
Lübeck.....	564	2		21	587	1,211	5		40	1,256
Bremen.....	1,210	19		16	1,245	2,586	52	1	42	2,681
Hamburg.....	3,217	96	21	337	3,671	4,678	121	37	553	5,389
Alsace-Lorraine.....	1,230	908	1	374	2,513	3,264	3,452	2	708	7,426
German Empire: Total.....	44,217	12,549	266	5,554	62,579					248,371
Without Oldenburg.....	43,758	12,538	266	5,527	62,089	169,780	57,347		708	19,135
Without Oldenburg and Württemberg.....	36,839	11,269	257	5,131	53,490	156,778	54,092		680	18,402
										229,952

Number of inhabitants to every student (without Württemberg and Oldenburg).

	Gym- nasia.	Real schools.		Total.
		With Latin.	Without Latin.	
Protestant.....	361	758	715	187
Catholic.....	464	2,651	1,507	314
Other denominations.....	571	757	535	202
Jews.....	55	146	104	30
Total.....	370	960	879	205

This mode of computation involuntarily leads to the opinion that small numbers presuppose a numerous participation, while large numbers presuppose a small participation, in secondary studies. This certainly is correct, but it does not give as adequate a statement as ratios would. For that reason the table is repeated here, displaying the number of students to every 10,000 inhabitants.

Number of students to every 10,000 inhabitants.

	Gym- nasia.	Real schools.		Total.
		With Latin.	Without Latin.	
Protestant.....	27.7	13.2	12.5	53.4
Catholic.....	21.4	3.8	6.7	31.9
Other denominations.....	17.5	13.2	18.7	49.4
Jews.....	173.7	65.7	92.7	332.2
Total.....	27.1	10.4	11.4	48.9

In all the three classes of secondary schools we find the Jews more numerously represented than the Christians. This is equally true in classical and modern high schools. The Protestant population also makes use of the opportunities for secondary education much more frequently than the Catholic, but there is quite a difference between the number of those in classical and those in modern high schools (so-called Real-schulen). These differences in the participation of the different denominations are so great that a more minute statistical comparison than the one presented in the foregoing table (see p. 299) would not materially alter the result shown in these ratios. Absolutely correct comparison would be possible only if the entire number of students in secondary schools could be viewed according to religious denomination and age, and compared with the male population divided in the same manner—that is, with reference to their religion and age. This is impossible, since neither the school statistics nor the general German census offer the material. The latter particularly, as far as the total for the Empire comes into question, suffers from a want of combination. Not even the most elementary distinction between the confessions, namely, that according to sex, is given. This is owing to the want of detailed enumeration in some States. German statisticians therefore earnestly desire that the next census may reveal the facts necessary for this and similar

comparisons. As far as the numbers go, the participation of the four groups (Protestant, Catholic, other Christians or dissenters, and Jews) in secondary education as given in the table must suffice for the present.

The facts which the foregoing ratios reveal are not in any way surprising, since estimates based upon Bavarian statistics, and upon those of a few other States, had revealed similar proportions years ago. Thus, for instance, the classical schools—that is, the so-called *gymnasia* in Bavaria—had some years ago among their pupils 36.5 Catholics, 46.3 Protestants, 86.7 Israelites of every 10,000 of the inhabitants. For 1890 Bavaria exhibits the following ratios of students to the total population (distinction as to sex being missing): Catholics, 28.8; Protestants, 36.5; Jews, 151.0, for every 10,000 inhabitants. Hence, the Jews in Bavaria, as was shown in 1863, have increased their ratio of students in *gymnasia* enormously—that is, nearly 100 per cent within about thirty years. The extraordinary increase in the participation of Jews in the secondary schools without Latin—that is, in the modern high schools, or *Realschulen*—is even greater.

Professor Von Mayr quotes in this connection a paragraph from Volume I of his *Bavarian Statistics of Education* (1873, p. 49), with reference to the attendance in classical high schools. He at that time remarked:

I should like to warn my readers not to draw immediate conclusions from the relative proportion of the different confessions upon the talent or inclination of the students, or the confession to which they belong. There are other considerations that determine the real participation in any branch of education besides talents and inclination, and among these are the ease or difficulty of attending certain schools. These are dependent upon the habitation of the parents and the location of the schools. Doubtless the population of any place or city furnishes the comparatively greatest contingent of students. Now, it must be considered that the Jewish population is nearly always found in large cities which have a variety of schools beyond the scope of the elementary schools. Hence, we find the Jewish children more frequently in secondary schools, while the Catholics are chiefly agriculturists, farmers, and the like, and live in hamlets, villages, and small towns, which do not offer opportunities for secondary education as large cities do. Similar proportions are found where the members of one confession are preferably grouped in larger cities, as, for instance, the Protestants in Upper Bavaria, where the participation of Protestants in secondary schools is comparatively larger than in Lower Bavaria, where they are found both in the cities and in rural districts.

What Dr. Mayr said twenty years ago is, in a measure, still applicable to-day, though it may not be possible to control it statistically. The statistics of the Empire fail to go into details on the subject of confessions with regard to the locality in which they are represented. If, however, Prussian statistics, which are very minute, are taken as a standard of measurement, we find (1) that the Jews form 1.2 per cent of the entire population of Prussia; (2) that they form 2.6 per cent of the city population; (3) but only 0.3 per cent of the rural population; and (4) 2.8 per cent of the population in cities of over 20,000 inhabitants.

From this it is obvious that the Jews have better opportunities for attending secondary schools. Their present strong participation in such

schools, is, however, not explained by this objective relation only; aside from this there must be a subjective tendency. This tendency is nursed doubtless by the choice of profession and occupation common among the Jews, they being found chiefly among the merchants and professionals, but not among mechanics and farmers.

Though it may be of interest to record similar statements from educational statistics of the United States, it can not be considered essential, since the undenominational character of the schools in this country precludes any reflections such as Professor Mayr was able to make for Germany. His reflections and ratios concerning denominations are not the essential features of his summary (see p. 3), but the proportion of students in the various classes of schools regardless of their denomination is of supreme importance, since it shows an enormous increase of pupils in the schools without Latin, and only a moderate increase in those with Latin. In viewing the table we must constantly bear in mind that the total of very nearly a quarter of a million pupils in secondary schools represents only the boys. If we add the number of girls attending secondary schools not enumerated here the total number would be increased to half a million. One-half a million of 50,000,000 inhabitants is 1 per cent. This is a very extraordinary percentage, for it means that of every 100 men, women, and children, one is in the secondary schools. If we abandon the total number of inhabitants and take the total number of school-going age, 6 to 20—namely, about 10,000,000—the proportion in secondary schools would be 5 per cent, a proportion not reached by any other country.

COURSES OF STUDY IN HISTORY FOUND IN VOGUE IN EUROPE.

Prof. Joseph Baar, Ph. D., published in a supplement to the annual catalogue of his school (a progymnasium in Malmedy, Germany, 1895) an essay in which he subjects the courses of study prescribed for the study of history in secondary schools in several European countries and the United States to a rigorous comparison. He then summarizes the various courses in such a way that the amount of time and matter prescribed may, at a glance, be seen. The matter is of supreme importance to teachers in this country, where universal history has remained a subordinate study, being reserved, as it were, to grace the high-school course.

The author starts out with this weighty remark:

Whether the study of history will bear fruit for life, or whether it remain mere text-book knowledge accumulated for examinations, or both, or neither; whether it develops the whole soul life of the pupil, clears the intellect, and fills the emotions and the heart with noble sentiments, or whether it will leave the heart cold, the head empty, causing confusion—all that depends principally upon the scientific and ethical personality of the teacher. Good text-books can only aid him in his work. Prescribed courses of study determining the aims and methods of his instruction

may promote or retard him; they can do nothing else. If we wish to sketch a perfectly true picture of how history is taught in foreign countries we should have to know above all who the teachers are that give the instruction and how they do it. As a matter of self-evidence, sources of such information are lacking. All we can do is to show what is intended by the authorities and adequately fix the rank in which the study of history is placed in the different countries by stating how much time is devoted to it and what matter is to be gone over.

The interest in this inquiry is a threefold one—a scientific, educational, and political interest. For the principles according to which the courses are framed, the text-books chosen, the selection of matter, and the distribution over the several years of the course determined, and lastly the method employed are all dependent upon the question: Why is history studied? (1) For the historian the science of history has its own aim. He desires to gain as extensive and thorough a knowledge as possible of historical facts. (2) It is different with the educator; history to him is a means to an end; he wants to give his pupils an intellectual and ethical education which is most desirable for life. Hence, he will select the matter of instruction to that end and form it in content and extent according to the capacity of his pupils. (3) The third and in most countries decisive motive power, the State, has the same purpose, but aside from that it has a political end in view. It emphasizes love of country, adherence to the existing form of government, and a general comprehension of governmental relations. According to this purpose the State schools will of necessity occupy themselves with home history, and according to the existing form of government the study of history will result in a history of princes or a history of the people—that is to say, it will be supported either by a monarchic-dynastic spirit or by a republican spirit. In private or denominational schools of Belgium and America other considerations, such as dictated by the church, come into play besides the political.

The author then subjects the courses and methods pursued in France, Russia, and the United States, and compares them with those generally adopted in Germany, Austria, Italy, and other countries. (See summary at the close of this article.) With reference to the United States, he points out that here the authorities do rarely more than prescribe the countries and epochs to be gone over; method and distribution of matter are left to the teacher. He says:

Nevertheless there are a number of uniform features in the teaching of history in America which show clearly that all the schools of the various States, though not ruled by a centralized power, are following a general, well-understood motive, that of amalgamating the foreign elements and making the population of the Union homogeneous in sentiment and aspiration. The aim of the study of history in the United States is more than in monarchical states—a political one. It is to prepare the young to a self-active participation in the life of the State by giving them the requisite historical knowledge and by training them in true American sentiment. This explains why the grammar schools generally confine themselves to American history. This home history is taught very thoroughly during the last two years of the elementary course (thirteenth and fourteenth year of life), and also in form of a review in the high schools. Ancient history, on the other hand, is taught only in the high or other secondary schools, and very superficially at that. English history is all that finds a little attention besides ancient and home history.

The author then subjects various text-books and courses of study to a critical analysis, quotes the course of study followed in the Baltimore City College, and finally places the various courses in juxtaposition. This summary is very interesting, and is here reproduced in full and very minute translation:

Courses of study in history.¹

[Hours per week.]

Year of age.	Prussia since 1892.	Austria since 1884.	Belgium since 1889.
	A.—Elementary department.	A.—Elementary department.	A.—Elementary department.
Eleventh	Biographies from native history, 1 hour.	Preparatory lessons, 1 hour. ²	Sketch of universal history, 2 hours.
		B.—Secondary department.	B.—Secondary department.
		I. COURSE.	I. COURSE.
Twelfth	Narratives from mythological history of the Greeks and Romans, 1 hour.	Ancient history: Greece and Rome mythology and biographies, 2 hours.	Ancient and Middle Age history (Greece and Rome) to the Crusades, 2 hours.
	B.—Secondary department.		
	I. COURSE.		
Thirteenth ..	Greek and Roman history from Solon to the Diodochi and from Pyrrhus to Augustus, grouped around leading characters; also important parts of oriental history—2 hours.	History of the Middle Ages, especially of Austria-Hungary, alternating with geography, 3 hours.	Review: History of the Middle Ages to the present time, till 1789, 2 hours.
Fourteenth ..	Brief review of Western Roman Empire; German history to the close of Middle Ages; history of other countries only where of general importance—2 hours.	Modern history, especially of Austria-Hungary, alternating with geography, 4 hours.	Brief review of the history of modern times; history of Belgium—2 hours.
		II. COURSE.	II. COURSE.
Fifteenth	German history from the close of Middle Ages till 1740; special stress on Brandenburg-Prussian history; other countries where needed for the comprehension of native history—2 hours.	Ancient history to conquest of Italy; special attention to history of civilization—3 hours.	Ancient history of Greece and Rome, and Middle Ages to Crusades, 2 hours.
Sixteenth	German and Prussian history from 1740 to the present time; comparative consideration of social and economic development—2 hours.	History of Rome till 476, and of Middle Ages; history of civilization—4 hours.	Review of matter gone over in previous year, 2 hours.
	II. COURSE.		
Seventeenth ..	Chief events of Greek and Roman history till 476 with reference to cause and effect; special stress on constitutional history, conditions of civilization, in groups facilitating comparison—3 hours.	History of modern times with especial attention to religious, political, and economic revolutions, and their effects upon civilization, 3 hours.	History of Belgium (65 hours); history of late years (15 hours)—2 hours.
Eighteenth ..	Account of events that have made epochs in the world's history from 476 to 1648, with reference to cause and effect; other states only where of great historical importance; historical and geographical review of the states of Europe at the close of the thirty years' war—3 hours.	History of Austria-Hungary; interior development of the Empire—3 hours. During second half year: Geography and ethnology, 2 hours; review of ancient history, 1 hour.	
Nineteenth ..	The most important events of modern, especially Prussian, history, with constant reference to cause and effect; same matter as in previous years, only more profoundly treated—3 hours.	.....

¹ The courses are sketched in the briefest possible manner. The ministerial order of May 24, 1892, contains minute details.² These lessons are chiefly on home history.

Congress of study in history—Continued.

Year of age.	France since 1890.	Italy since 1894.	Russia since 1890.	United States (Baltimore City College).
	<i>A.—Elementary department.</i>	<i>A.—Elementary department.</i>	<i>A.—Elementary department.</i>	<i>A.—Elementary department.</i>
Tenth	Elementary biographies; historical scenes—1½ hours.			
Eleventh	Summary of history of France to death of Louis XI, 1½ hours.			
Twelfth	Same till 1815, 1½ hours.		Elementary course of Russian history, 2 hours.	
	<i>B.—Secondary department.</i>	<i>B.—Secondary department.</i>	<i>B.—Secondary department.</i>	<i>B.—Secondary department.</i>
			I. COURSE.	
Thirteenth ..	History of the Orient, 1½ hours.	History of the Orient and Greece (including geography), 3 hours.	Systematic course of ancient history; essentials of oriental history—2 hours.	History of the United States; English history; constitutional history—3 hours.
Fourteenth ..	History of Greece, 1½ hours.	History of Italy till 476 (including geography), 3 hours.	Systematic course of the history of Middle Ages, and of Russia to Ivan IV, 3 hours.	History of Rome; constitution of Maryland—2 hours.
Fifteenth	History of Rome, 1½ hours.	History of Europe, especially Italy, from 476 to Henry VII of Luxemburg, 3 hours.	Systematic course of modern history from 1775 to present time; same of Russia—2 hours.	History of oriental nations and Greece; historical composition—1 hour.
			II. COURSE.	
Sixteenth	History of Europe, especially France, till 1270, 1½ hours.	Same from Henry VII till 1748, 4 hours.	Extensive reviews of Greek and Roman history; review of Russian history—2 hours.	Constitutional history, with compositions, 1 hour.
Seventeenth ..	Same from 1270 till 1610, 1½ hours.	Same from 1748 till present time, 4 hours.		Political economy; most important events of the nineteenth century—1 hour.
Eighteenth ..	Same from 1610 till 1789, 1½ hours, and ¼ hour conference.			
Nineteenth ..	Same from 1789 till the present time, 3 hours.			

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STATISTICS OF THE UNIVERSITY LIBRARIES IN EUROPE.

There have been recently published a number of authentic books on the origin, management, spirit, and present status of European universities, notably on those in Germany. The report of the Bureau of Education of 1891-92 contains an English rendition of the most authoritative of these books, that of Professors Paulsen and Conrad, which is remarkable for its historical and statistical reviews. But none of these publications gives much information concerning the libraries of these famous seats of learning. Dr. R. Kukula, the author of *Minerva*, *Jahrbuch der gelehrten Welt*, has undertaken to gather the information desired, and presented it in an article published in the *Academische Revue* (March, 1895), the substance of which is here reproduced. Dr. Kukula, says:

Among the appliances for teaching which every university offers its teachers and students the library takes the front rank. A statistical summary of the number of volumes in the libraries of universities in the large States of Europe, their annual expenditures, and, so far as possible, the number of books used in a given year, would throw light upon the degree of scientific equipment of the various institutions, and offer a ratio of comparison for the countries represented.

Of course it would be erroneous to draw far-reaching conclusions from the facts gathered, such as judging the importance of an institution of learning from the extent of its library. Several large and valuable libraries are found preserved in unimportant but formerly eminent centers of culture. The data offered in the following tables are chiefly derived from the fourth volume of *Minerva*. They permit the conclusion that in some countries the importance of higher education may be gauged by the importance bestowed upon the university libraries. However, for most countries this would not hold good, since many of them possess, aside from great state, church, and private libraries, certain renowned scientific central libraries. In the following summaries these are not considered, and this fact should prevent the reader from hasty conclusions.

The Royal Library in Berlin; the Royal Court and State Library in Munich; the British Museum in London; the *Bibliothèque Nationale* in Paris; the *Biblioteca Nazionale Centrale* in Florence; the Imperial Public Library in St. Petersburg; the Royal Libraries in Stockholm, The Hague, and Copenhagen, are unquestionably the largest and most important libraries of their respective countries. Nevertheless they are here purposely omitted, since it was the object to give the status of libraries specifically intended for university use. If the possessions and expenditures of such eminent institutions as the British Museum and others mentioned above were counted in, they would naturally change the order in which the countries appear.

Before turning to the tables, it is necessary to state that the data collected with reference to the number of books, etc., are for the calendar year 1894; the data concerning expenditures or appropriations for the fiscal year ending in 1894, and the data referring to the frequency with which the books have been used or loaned (so far as it was possible to obtain the information) for the school year 1893-94.

Germany, as a matter of self-evidence, stands at the head of the list, because its university libraries have always been the chief sources of information for learned men in that country. The character and extent of higher education in Germany has ever been closely connected with and dependent upon the universities, and erudition outside of universities is rarely acknowledged, except by drawing it into the universities. Paulsen says in his recent work on the German Universities:

Learned man and professor are synonymous terms in Germany. When a great scholar is mentioned there, the question at once arises, In what university is he active? And if he is not in a university, it may be confidently expected that he feels this official disregard. Again, when a professor is mentioned, the question is asked, What has he written? what are his scientific achievements? The consequences of this relation have been most significant for the formation of the entire German intellectual and scientific life.

To this may be added that this relation of erudition to the higher seats of learning has been decisive for the development of the great libraries of Germany. This explains the vast aggregations of books in

the centers of culture, while in England and America quite an opposite tendency has made itself felt. In these countries many large and influential libraries are established and maintained by the people, and they in turn influence the people; they are public, democratic institutions, while the German university libraries are exclusive institutions.

Of course this statement is only relatively true, since the German university libraries may be used by the public also. But the needs of the university are considered first in the purchase of books, not the needs and demands of the reading public, which would, as experience shows, run to books of fiction.

After Germany come Italy and Great Britain, the classic countries of bibliophiles. France, the centralized government of which called into existence the University of France, has neglected the libraries of the so-called "facultés," and since the Bibliothèque Nationale is excluded from the following list, France appears to be ranking low, but in fact it far outranks Austria and Russia, being but slightly behind Italy and Great Britain:

GERMANY.

	Possessions in 1894.			Annual appropriation for 1894.		Volumes used in 1893-94.	
	Volumes.	MSS.	Pamphlets, etc.	National currency.	United States equivalent.	In the library.	Loaned.
				<i>Marks.</i>			
Berlin.....	148,100	221	72,000	18,000	\$4,284	6,000	32,000
Bonn.....	251,235	1,273	(?)	31,435	7,482	(?)	30,000
Breslau.....	303,135	3,702	a 30,000	29,490	7,019	35,000	30,000
Erlangen.....	184,100	2,035	127,000	22,707	5,404	5,000	12,000
Freiburg.....	256,000	600	b 3,000	16,000	3,806	3,800	16,968
Giessen.....	256,200	1,400	c 415	18,367	4,371	16,000	16,192
Göttingen.....	466,000	5,800	b 14,400	44,710	10,641	27,609	44,413
Greifswald.....	146,320	1,076	(?)	19,758	4,702	2,707	16,048
Halle.....	190,408	1,832	(?)	25,565	6,004	(?)	26,033
Heidelberg.....	401,000	3,425	{ 173,000 } c 28,200	16,000	3,808	35,000	26,230
Jena.....	205,000	900	100,000	17,766	4,238	(?)	12,000
Kiel.....	219,500	2,380	b 3,100	19,660	4,678	12,395	14,509
Königsberg.....	220,750	1,120	(?)	27,603	6,569	9,141	24,080
Leipzig.....	500,545	4,138	(?)	40,000	9,520	(?)	36,000
Marburg.....	156,450	557	95,000	21,122	5,027	(?)	23,000
Munich.....	402,900	2,022	{ 46,000 } c 668	12,000	2,856	(?)	(?)
Rostock.....	175,606	1,356	(?)	20,590	5,020	600	14,827
Strasbourg.....	700,200	3,870	a 40,000	68,750	16,363	40,337	48,828
Tübingen.....	300,000	3,500	(?)	21,667	5,156	16,195	25,105
Würzburg.....	321,800	1,500	(?)	23,000	5,474	20,000	21,000
Total.....	5,811,549	42,707	(?)	514,790	122,520	(?)	(?)

a Engravings.

b Maps.

c Documents.

ITALY.

	Possessions in 1894.			Annual appropriation for 1894.		Volumes used in 1893-94.	
	Volumes.	MSS.	Engravings.	National currency.	United States equivalent.	In the library.	Loaned.
				<i>Lire.</i>			
Bologna.....	298,000	5,000	(?)	8,900	\$1,718	23,501	1,276
Cagliari.....	80,600	307	(?)	3,493	672	12,854	745
Camerino.....	40,000	122	(?)	1,150	222	2,242	390
Catania.....	80,000	200	(?)	4,050	782	36,863	3,491
Ferrara.....	91,000	1,889	{ 2,350 α 3,191 }	2,500	483	(?)	(?)
Genoa.....	157,000	1,596	(?)	8,380	1,617	16,545	962
Messina.....	32,400	778	(?)	3,793	732	33,344	448
Modena.....	27,700	1	(?)	1,000	193	1,814	334
Naples.....	209,800	109	(?)	17,000	3,281	178,789	3,686
Padua.....	201,000	2,326	(?)	8,894	1,717	30,069	1,681
Palermo.....	180,000	1,507	(?)	11,648	2,250	44,808	1,296
Parma.....	272,000	4,769	60,000	9,000	1,737	25,051	789
Pavia.....	216,000	1,100	(?)	8,000	1,544	36,035	2,085
Perugia.....	20,000	(?)	(?)	3,320	641	976	334
Pisa.....	133,000	274	(?)	8,700	1,679	24,028	2,612
Rome.....	163,000	284	(?)	11,400	2,200	43,901	1,303
Sassari.....	40,400	207	(?)	3,630	695	7,001	801
Siena.....	95,000	4,890	(?)	6,036	1,165	10,891	430
Turin.....	200,900	4,126	10,321	22,215	4,287	141,679	1,906
Urbino.....	25,900	120	(?)	500	97	(?)	(?)
Total.....	2,563,700	29,655	(?)	143,579	27,611	(?)	(?)

α Autographs.

GREAT BRITAIN AND IRELAND.

	Possessions in 1894.			Annual appropriation for 1894.	
	Volumes.	MSS.	Engravings.	National currency.	United States equivalent.
England:					
Cambridge.....	500,000	6,500	(?)	£2,052	\$9,993
Dulwich.....	11,000	(?)	(?)	50	244
Manchester.....	60,000	(?)	(?)	(?)	(?)
Oxford.....	500,000	30,000	20,000	8,528	41,531
Scotland:					
Aberdeen.....	120,000	(?)	(?)	840	4,091
St. Andrews.....	100,000	(?)	(?)	630	3,068
Edinburgh.....	177,000	3,000	(?)	1,040	5,065
Glasgow.....	150,000	(?)	(?)	1,838	8,551
Ireland:					
Dublin.....	231,600	(?)	(?)	(?)	(?)
Total.....	1,849,600	39,500		α 15,000	α 73,050

α About.

NOTE.—The following English, Scotch, and Irish universities and colleges either have no large libraries of their own and use the excellent public libraries established and maintained by the communities, or, if they have distinct college libraries, they have failed to report to Prof. R. Kukula: Aberystwith (Wales); Bristol, Durham, Leeds, Liverpool, London, Newcastle, Nottingham, Sheffield (England); Dundee (Scotland); Belfast, Cork, and Galway (Ireland).

AUSTRIA-HUNGARY.

	Possessions in 1894.			Annual appropriation for 1894.		Volumes used in 1893-94.	
	Volumes.	MSS.	Miscellaneous.	National currency.	United States equivalent.	In the library.	Loaned.
Austria:				<i>Florins.</i>			
Czernowitz.....	102,000	43	(?)	7,364	\$3,535	9,186	4,560
Graz.....	135,200	1,709	(?)	8,968	4,305	46,286	6,827
Innsbruck.....	135,900	1,078	(?)	8,674	4,163	(?)	5,877
Krakau.....	292,500	6,685	{ a 7,705 } b 9,481	10,484	5,032	(?)	15,000
Lemberg.....	124,700	465	b 11,000	9,384	4,504	54,899	15,566
Prague.....	211,200	3,848	c 1,602	14,937	7,170	247,467	17,634
Vienna.....	435,000	511	(?)	25,236	12,113	316,078	28,349
Hungary:							
Agram.....	91,000	500	(?)	5,200	2,496	3,315	
Budapest.....	241,000	1,500	(?)	12,000	5,760	45,671	
Klausenburg.....	d 100,000	(?)	(?)	6,000	2,880	(?)	(?)
Total.....	1,868,500	16,339	(?)	108,247	51,959	(?)	(?)

a Engravings.

b Coins.

c Documents.

d About.

RUSSIA.

	Possessions in 1894.			Annual appropriation for 1894.	
	Volumes.	MSS.	Maps.	National currency.	United States equivalent.
Charkow.....	137,100	233	3,000	<i>Rubles.</i> 6,000	\$2,118
Dorpat.....	288,700	772		6,000	2,118
Kazan.....	146,000	811		6,000	2,118
Kijew.....	118,000	(?)		6,000	2,118
Moscow.....	217,000	(?)		6,000	2,118
Odessa.....	108,000	213		6,000	2,118
St. Petersburg.....	220,500	9,340	760	6,000	2,118
Warsaw.....	400,000	1,310		6,000	2,118
Helsingfors.....	170,000	2,000	6,500	12,903	4,555
Total.....	1,805,300	14,688		60,903	21,499

SWEDEN AND NORWAY.

	Possessions in 1894.			Annual appropriation for 1894.		Volumes used in 1893-94.	
	Volumes.	MSS.	Pamphlets.	National currency.	United States equivalent.	In the library.	Loaned.
Christiania.....	320,000	(?)	(?)	<i>Kroners.</i> 28,500	\$7,618	42,533	26,582
Lund.....	150,000	(?)	(?)	12,752	3,418	19,437	6,869
Stockholm.....	30,000	(?)	(?)	4,000	1,072	(?)	1,000
Upsala.....	275,000	12,000	5,000	9,078	2,432	34,934	10,138
Total.....	775,000	12,000	(?)	54,330	14,540	(?)	44,529

SPAIN.

	Possessions in 1894.		Annual appropriation for 1894.	
	Volumes	MSS.	National currency.	United States equivalent.
			<i>Pesetas.</i>	
Barcelona.....	154,000	2,000	5,000	\$965
Cadiz.....	7,500	800	(?)	(?)
Granada.....	21,000	138	1,000	193
Madrid.....	205,000	3,013	15,000	2,895
Oviedo.....	40,000	200	1,000	193
Salamanca.....	80,000	1,038	2,000	586
Santiago.....	40,000	271	1,060	193
Seville.....	62,000	796	3,000	579
Valencia.....	45,000	719	1,500	289
Valladolid.....	32,000	308	1,000	193
Zaragossa.....	30,000	31	1,000	193
Total.....	716,500	9,314	31,500	6,079

FRANCE.

	Volumes in 1894.	Annual appropriation in 1894.			Volumes in 1894.	Annual appropriation in 1894.	
		National currency.	United States equivalent.			National currency.	United States equivalent.
		<i>Francs.</i>				<i>Francs.</i>	
Aix.....	22,200	12,590	\$2,430	Montauban.....	21,900	1,735	\$335
Besancon.....	14,300	8,000	1,544	Montpellier.....	82,200	24,275	4,685
Bordeaux.....	61,000	21,060	4,065	Nancy.....	36,700	22,985	4,436
Caen.....	33,500	11,700	2,258	Paris.....	142,300	69,090	13,334
Clermont.....	18,400	9,200	1,776	Poitiers.....	28,300	12,700	2,451
Dijon.....	31,300	14,615	2,821	Rennes.....	20,000	13,095	2,527
Grenoble.....	19,700	12,370	2,387	Toulouse.....	58,800	26,570	5,128
Lille.....	44,700	25,985	5,015				
Lyons.....	56,900	27,640	5,334	Total.....	692,200	313,610	60,527

Hence, with reference to the number of volumes and manuscripts, the university libraries of the foremost European countries range as follows:

	Volumes.
Germany	5,850,000
Italy	2,594,000
Great Britain.....	1,890,000
Austria-Hungary	1,885,000
Russia.....	1,820,000
Sweden and Norway	790,000
Spain.....	726,000
France	692,200

This order is changed, however, if we rank the countries with reference to the amount of money paid for the maintenance of their university libraries:

Germany	\$122, 520
Great Britain.....	73, 050
France	60, 527
Austria-Hungary	51, 939
Italy	27, 611
Russia.....	21, 499
Sweden and Norway	14, 540
Spain.....	6, 079

It would hardly be fair to rank these countries with reference to the frequency in the use of the library books, since the rules and regulations are different in the various institutions and the conditions and accommodations peculiar to each university.

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CHAPTER VIII.

PUBLIC INSTRUCTION IN ITALY.

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PREFACE.

The last twenty or thirty years have seen extraordinary progress in popular education all over the civilized world, and notably so in England, France, and Italy. With what has been accomplished in the first two countries the American public is measurably familiar. But even scholars and educators generally have little knowledge of the educational work that has been going on in Italy at the same time. This fact is the reason for the preparation of the present monograph.

As the reader will see, the writer treats the subject quantitatively rather than qualitatively. A critical estimate of Italian education would require a more intimate knowledge of the subject than he can lay claim to. His main object has been to present in outline the system of public instruction that has been evolved in Italy since the establishment of the Kingdom.

The writer expresses his obligations to His Excellency Count Pullet, under secretary of state for public instruction of the Kingdom of Italy; to Prof. C. F. Restagno, the Count's secretary, and to Signor Lucigi Cippitelli, inspector of schools of Rome, for documents and other valuable information. His thanks are especially due, however, to Dr. Egisto Rossi, of the Italian statistical bureau, author of a monograph on education in the United States, for documents and other substantial assistance.

CONTENTS.—*Unification of Italy.—The Educational State of Italy in 1861.—The Dawn of the New Era.—General Political Facts.—The Casati Law.—The Administration of Public Instruction.—The Asilo.—Day Elementary Schools.—Evening and Holiday Elementary Schools.—The Teachers of Elementary Schools.—School Supply and Compulsory Education.—Normal Schools.—Secondary Classical Schools.—Secondary Technical Schools.—The Universities.—The Superior Institutes.—The Superior Special Schools.—Miscellaneous Schools: Institutes of Mercantile Marine; Special Schools and Practical Schools of Agriculture; Schools of Music; Industrial and Commercial Schools; Academies and Institutes of Fine Arts; Musical Institutes and Conservatories; Military Institutes and Schools of Marine.—Government Libraries.—Twenty Years of Public Schools in Rome.—Finance: Teachers' Pensions.—The Warfare upon Ignorance.—Summary and Conclusion.—Authorities.*

THE UNIFICATION OF ITALY.

The eloquent words with which Sismondi closes his *History of the Italian Republics* have often been quoted as a fitting characterization of the State of Italy in the period following the Treaty of Vienna and preceding the first events of the series that led immediately to Italian freedom and union. "Italy is crushed, but her heart still beats with a love of liberty, virtue, and glory; she is chained and covered with blood, but she still knows her strength and her future destiny; she is insulted by those for whom she has opened the way to every improvement; but she feels that she is formed to take the lead again; and Europe will know no repose till the nation which in the dark ages lighted the torch of civilization with that of liberty shall be enabled to enjoy the light which she created." Politically, however, the period was more tersely characterized by Prince Metternich, when he said so cynically, "Italy is a mere geographical designation."¹

Not to go further back, Italy had been trampled under the feet of foreigners from the close of the fifteenth century to the close of the eighteenth—the French, the Spaniards, the Germans, and the Austrians. It was divided into numerous States, all weak, all small, all despotisms; only two, Sardinia and the Papedom, having Italian rulers, and most of them more or less dependent upon foreign powers. Italian patriots could find no language too strong to describe the hopeless degradation of their country. When Napoleon came he overthrew nearly all of the existing States and made the major part of Italy immediately dependent upon France, or rather upon himself; still, by sweeping away ancient abuses and confusion, and introducing many much needed reforms in legislation, in administration, in judicial practice, in the fiscal system, in education, in means of communication, he strengthened the sentiment of union, and contributed to the development of a real national life. But with his downfall the new régime came, at least seemingly, to an abrupt end.

It was the aim of the diplomatists who at Vienna rearranged the map of Europe practically to restore the state of things existing in the peninsula before the French Revolution; but they did not reckon with the progress of thought, of which the revolution was in part a cause and in part an effect.² In the years intervening between 1815 and 1859 powerful causes were silently undermining the numerous potentates who ruled in Italy, with the sole exception of the King of Sardinia. The country below the Alps is a geographical unit. The

¹"Since the fall of the Roman Empire (if not even before it) there had never been a time when Italy could be called a nation any more than a stack of lumber can be called a ship."—Forsyth, quoted by Marriott, *The Makers of Modern Italy*.

²"The Italy of 1815 differed but little from the Italy of 1748; but in 1815 there were hopes which had no being in 1748. Italy was divided on the map, but she had made up her mind to be one."—Dr. E. A. Freeman: *The Geographical History of Europe*.

people of the twelve or fifteen States all stood in a similar relation to the great name of Rome. Mentally and morally, they constituted one people—the Italians. They all used the language in which Dante wrote his immortal poems; they all participated in that marvelous growth of democratic ideas and shared in that ardent desire for national life, which are such powerful elements in recent history. Accordingly, nothing but favorable external conditions, such as actually existed in 1859–1870, were necessary to enable the Italians to achieve the substance of the dreams of their prophets and patriots for many hundreds of years.¹ A recent writer has well said that Italian unification is the most romantic if not the most important exemplification of “the consolidation of kindred and contiguous States, or rather bundles of States, on the basis of the vital principle of nationality.”² And still another: “The rapid creation of the present Kingdom of Italy, after her long and bitter oppression, is one of the marvels of modern history, and evidences how much may be done by the courage and wisdom of a comparatively few master minds, and how true is the motto of the patriot, ‘never to despair of the Republic.’”³

THE EDUCATIONAL STATE OF ITALY IN 1861.

But the political unification of Italy, necessary as it was to that end, by no means realized the Italian ideal. Of itself alone, it could not even permanently endure. While physical force may overthrow and wholly destroy those ideas and sentiments that assume the form of objective political and social facts, it can not, save indirectly and in the long run, alter men’s convictions or change their modes of thinking and tones of feeling. Force put an end to English rule in the Thirteen States, and crushed slavery in our civil war; but some other and higher form of power was needed to blend those States together in a vital federal union and to make the emancipated slaves fit for the rights and duties of freemen. Garibaldi’s sword could overthrow the Bourbon dynasty in the Two Sicilies, but it was a powerless weapon against the ignorance and superstition that had so long been startling social facts in that Kingdom. It was essential that the mental and moral life of the people should be cleansed at its fountain. This fact the best of

¹ Napoleon said at St. Helena: “Italy is one sole nation. The unity of customs, of language, of literature, in some future more or less distant, will unite all its inhabitants under one sole government. * * * Rome is undoubtedly the capital which one day the Italians will select. * * * It is necessary to the happiness of Europe that Italy should form one sole State, which will maintain the equilibrium on the continent between France and Austria, and on the sea between France and England.”

Count Cavour said in Parliament but a few months before his untimely death: “The choice of a capital is determined by high moral considerations. It is the sentiment of the people that decides. Rome unites all the conditions, historical, intellectual, moral, which form the capital of a great state.”

²Marriott: *The Makers of Modern Italy*.

³Sir R. Phillimore: *International Law*.

the Italian leaders understood perfectly well. Mazzini, the republican idealist, who defined democracy as "the progress of all through all under the leadership of the best and wisest," placed equal stress upon education and instruction as means for accomplishing his purposes. Massimo d'Azeglio, who was a man of a much more practical mind, although an artist and man of letters, used to say, "Before forming Italy we must first form the Italians." D'Azeglio "endeavored to educate the youth of Italy in a higher political creed than the assassination of tyrants,"¹ including in the programme that he laid down in 1848, the promotion of education and the establishment of schools. It is no disparagement of Cavour, of Victor Emmanuel, and of Garibaldi to say that the value and permanency of their work waited upon the school-teacher with his primer.

"In the matter of education, the Kingdom of Italy at the time of its formation might almost be described as a desert, broken here and there by an oasis of matchless fertility and luxuriance. The learning of the learned was high, and the ignorance of the ignorant profound."² The writer might have added that the learned were few, the ignorant many. This conjunction of high learning and profound ignorance was due to two conspicuous causes. From early times the Italian universities had maintained high standards of culture; the public authorities had most grievously neglected popular education. Touching the second of these facts, the ordinary tests are decisive.

By the end of 1861 the Kingdom of Italy, as it now exists, had been formed with two important exceptions: Venetia continued subject to the Austrian Emperor until 1866, and Rome to the Pope until 1870. The census of 1861, back of which the Italian authorities do not commonly go in presenting educational statistics, accordingly does not embrace those important provinces. It may be added that in 1871 they contained 3,647,000 of the 26,801,000 people of Italy.

Proportion, per 100 inhabitants, of the Italian population able to read in 1861.

	Males.	Females.	Total.
I. Without distinction of age.....	27.60	16.27	21.98
II. From 6 to 12 years of age.....	20.91	14.57	17.74
III. From 12 to 20 years of age.....	32.89	24.38	28.63

To state the totals from the opposite point of view, 78.06, 82.21, and 71.45 per cent of the several descriptions of persons were unable to read, or were, as the Italians say, *analfabeta*.

To a person accustomed to study such statistics, this table is full of interest. The relative number of illiterate persons is very large. The difference between the number of illiterate men and women is much too great, while the per cents of illiteracy in the several periods are

¹ Marriott: *The Makers of Modern Italy*.

² *The Encyclopædia Britannica*: Article "Italy."

comparatively uniform. In well-educated countries the years from 6 to 12 and from 12 to 20 are school-going years, and the relative number of persons of such ages able to read, especially of those from 12 to 20, is larger than the relative number of such persons of all ages.

Of the men who married in 1866, 59.96 per cent, and of the women 78.97 per cent, or 69.465 per cent of both sexes, signed their marriage papers with a cross. Of the total number of conscripts drawn for the army the same year, 64.01 per cent were illiterate.

The statistics showing the educational backwardness of the Kingdom at its formation become still more impressive when considered with reference to geographical distribution. Any person having a general familiarity with Italian history and current life may find matter of serious instruction in the following table. It shows most conclusively that those parts of the Kingdom were best educated where government had been best, and the people freest where industrial, commercial, and moral life were most active, where national sentiment was strongest—in a word, where modern progressive ideas had taken deepest root.

Proportion, per 100 inhabitants, of the Italian population able to read and write, or at least to read, in 1861, according to compartments.

Compartments.	Males.	Females.	Both sexes.
Piedmont.....	59.25	39.29	49.23
Liguria.....	42.76	24.96	33.60
Lombardy.....	51.50	41.03	46.34
Venice a.....			
Emilia.....	27.81	16.71	22.42
Tuscany.....	31.60	28.08	25.98
Marches.....	22.52	11.72	17.04
Umbria.....	21.41	10.62	16.17
Rome a.....			
Naples.....	20.52	7.17	13.74
Sicily.....	16.77	6.16	11.40
Sardinia.....	14.93	5.60	10.28
The Kingdom.....	31.91	18.73	25.32

a Not covered by the census of 1861.

Once more, 68.19 persons in every 100 of the male population 6 years of age and upward, and 81.27 of the females, were illiterate. From 20 years of age and upward the corresponding ratios were 65.47 and 81.52 to the 100. Such was the educational condition of Italy in 1861—the country in which the Renaissance was born and in which it attained its fullest development! Plainly, the Italians stood in need of a mental and moral regeneration. Besides, although powerful forces had been working in the direction of unity for a half century, there were also particularistic or divisive influences at work. The people of the old states needed to be welded together and be made to respond still more strongly to the national spirit. Nor could any other cause contribute so powerfully to both these ends as a really national system of education that should reach all classes and conditions of men.

THE DAWN OF THE NEW ERA.

Fortunately a new educational era was already dawning. It is an interesting fact that the Casati law, with which the new era opened, was enacted by the Sardinian parliament the very year that saw the first practical step taken in the direction of political unity. It bears the date Turin, November 13, 1859. The battles of Magenta and Solferino, which freed Lombardy from the Austrians and secured her union with Piedmont, were fought June 4 and June 24 of the same year. In 1860 Tuscany, Parma, Modena, the Roman legations, the Marches, and the two Sicilies were united with the northern provinces, and in 1861 Victor Emmanuel was proclaimed King of Italy. Venetia took her place in the new Kingdom in 1866 and Rome hers in 1870. In the meantime the system of education inaugurated in 1859, with modifications, was applied to the several provinces immediately on their becoming free and taking their places in the national system.

The fact is, however, that the law of 1859 was not an abrupt beginning of the new order of things. The following summary, prepared by another hand, reveals a long series of steps leading up to it:

MEMORABLE DATES.

1729 and 1772. Establishment of famous royal constitutions by princes of the house of Savoy, through which the control of secondary education was taken away from the religious orders, and the Collegio delle Province, with one hundred free scholarships, was established with the aim of preparing, in connection with the university, teachers qualified to give this instruction. Schools of methods were established to prepare teachers for primary schools, and with the title of *Magistrato della Riforma*, the germ of a well-organized council of public instruction appeared.

1786. Reorganization of rural schools in Lombardy, the decree stipulating for the schools of the poor.

1802. Sub-Alpine republics decreed that all communes should establish elementary schools.

1808. Schools reorganized in parts of Italy under French domination. Academies established at Turin, Genoa, and Pisa as integral parts of the University of France.

1813. Reorganization of public instruction in Rome.

1818. New school law promulgated in the Lombardian-Venetian kingdom, which in 1822 became the code of education for that part of Italy.

1844. Establishment of "*Asili d' Infancia*," infant schools, in Piedmont, which were the beginning of the well-organized school system.

1847. (Decree of November 30.) Office of minister of public instruction created.

1849. Establishment of "*Società d' Istruzione e d' Educazione*" in Lombardy-Venetia, which has been of great assistance in the organization of the present public school system.

1859. Promulgation of the "*Legge Casati*," or school law, named from the minister of public instruction at that date, which forms the basis of the present school system, as it provided that each commune should maintain an elementary school, that teachers should have certificates of capacity, that there should be great strictness in university examinations, etc.

1867. Religious corporations abolished and their schools classed as private. Other modifications of law of 1859 made.

1877. Instruction made obligatory for children between 6 and 9 years of age.

1878. Gymnastics placed on school programmes.

1881. Legal enactments reorganizing higher council of education and making changes in school supervision.

1886 and 1888. Legal enactments bearing upon teachers' salaries and teachers' licenses.¹

As will be seen, a few dates subsequent to the Casati law are inserted in the summary.

It is instructive to note the prominence of northern Italy, and particularly of Piedmont, in this series of memorable dates.

GENERAL POLITICAL FACTS.

The area of Italy is 114,410 square miles. The population at the census of 1881, the last taken, was 28,459,628; it is now estimated at something more than 30,000,000.² The Kingdom is divided for different purposes—historical, political, administrative, and judicial—in different ways. The only divisions that we need to consider are the provinces, the largest administrative divisions, of which there are 69, and the communes, the smallest, of which in 1889 there were 8,256.³

The constitution, or *statuto*, granted by Charles Albert in 1848, which made Sardinia a constitutional monarchy, is to-day the fundamental law of the Kingdom of Italy. It vests the legislative power in the King, in the Senate appointed by the King from certain designated classes of persons,⁴ and the Chamber of Deputies elected by the people. It vests the executive power in the King, who reigns by the grace of God and the national will. The King exercises his executive functions through responsible ministers. The parliamentary system prevails in practice, ministers or the Government being dependent upon the vote of the Chamber of Deputies. The provinces have each a provincial council and commission; the communes, a communal council, a municipal council, and a syndic, or mayor. Such are the general features of the Government as far as we are concerned with them.

THE CASATI LAW.

The Casati law, which took its name from M. Gabrio Casati, minister of public instruction at the time of its passage, consisted of 5 titles and 380 articles. These are the several titles: (1) The administration of public instruction; (2) Superior instruction; (3) Secondary classical instruction; (4) Technical instruction; elementary instruction.

¹ See the Report of the Commissioner of Education for the year 1888–89, Chapter VI.

² Estimated as 30,724,897 on December 31, 1893.

³ There were 8,258 in October, 1894.

⁴ "The Senate is composed of the princes of the royal house who are of age, and of an unlimited number of members above 40 years old, who are nominated by the King for life, a condition of the nomination being that the person should either fill a high office or have acquired fame in science, literature, or any other pursuit tending to the benefit of the nation, or finally, should pay taxes to the annual amount of 3,000 lire, or £120." (*The Statesman's Yearbook*, 1890.)

Article 1, however, recognizes but three branches of education: Superior, secondary classical, and technical and primary. All these subjects are dealt with comprehensively, and some of them with much detail. A closer analysis of this celebrated law is not called for, nor is it necessary to follow in order the numerous changes and modifications to which it has been subjected. My task is to describe the principal features of the existing system. Such dates as are of chief importance will be given by the way. It is, however, important to understand that this celebrated statute is the base line from which all subsequent school legislation is to be measured.

THE ADMINISTRATION OF PUBLIC INSTRUCTION.

We are now to describe the various organs or authorities that exercise educational power and responsibility.

(1) All general legislation in relation to the subject is enacted by the national legislature. How the legislature has used its power so far as we are concerned with it, will appear as the exposition proceeds.

(2) The King is the supreme educational executive. His relations to the department of public instruction are not different from his relations to the other executive departments. That is, the King, subject to the laws, acts through the minister of public instruction.

(3) The minister of public instruction is a member of the cabinet, or Government, and like his fellow ministers, although appointed by the Crown, is responsible to the popular branch of the legislature. He may be considered under two aspects: He is the agent through whom the King acts in discharging those educational duties committed to him; he performs a great number of official acts that the laws devolve upon him directly.

(4) The superior council of public instruction consists of 24 ordinary and 7 extraordinary members, all appointed by the King for the term of seven years, and all persons of high competency and repute. A large majority of the councilors hold other educational appointments, as professorships in universities; but five of them must be chosen from among persons not engaged in educational work. Only the ordinary councilors receive compensation; and as most or all of these draw salaries from the Government for other services rendered, a small compensation is deemed sufficient, one that little more than covers their expenses while acting as councilors.

The superior council holds a regular meeting every six months. The minister of instruction is the president, and calls special meetings when, in his judgment, they are necessary. The minister and the council are assisted in the performance of their duties by a legal counselor, who gives advice as to the interpretation and application of the educational laws and regulations.

The superior council prepares and examines all projects of laws relating to public instruction, and renders judgment on matters regarding the instruction and administration of the schools. It examines and

presents to the minister for his approbation books and treatises for use in the public schools and the programmes of instruction. The judgment of the council is required: (1) When the claims of aspirants to vacant professorships in the universities are to be considered; (2) when questions of competency between conflicting scholastic authorities are to be decided; and (3) when questions of scandal or failure in the discharge of duties on the part of professors of secondary and higher schools arise. At the end of every five years the superior council presents to the minister a general report of the condition of each branch of national education, with appropriate remarks and proposals. For this purpose annual reports are sent to the council by the general inspectors and by other scholastic authorities.

For the better performance of its duties, the superior council is divided into three sections, or committees, corresponding to the three branches of public instruction. Assignments to these committees are made by the minister.

The powers and duties of the committee on technical and elementary instruction should be more particularly noticed. At its head is an inspector-general, who has the assistance of 9 central or general inspectors and 69 circuit or provincial inspectors, one from every province in the Kingdom. Acting through these assistants, the inspector-general sees to it that the communes fulfill their obligations relating to education according to law, and that the elementary schools are carried on in accordance with the programmes and regulations emanating from the central authority. These inspectors are appointed by the King and must be persons who are reputed competent by reason of education, professional attainments, and moral authority to perform their responsible duties.

While the main permanent features of the central administration are as now outlined, numerous minor changes appear from time to time. These are made by the minister of instruction, the more important of them subject to the approval of the superior council. As respects these details of direction and administration, very much depends upon the minister for the time being. Mention should be made of the giunta, an executive board or committee appointed as above mentioned, which exists for its own special purposes.

In 1891 the central scholastic administration was organized as follows:

The minister secretary of state.

The under secretary of state.

The cabinet, consisting of 8 persons.

The general secretary's office, consisting of 14 persons.

The superior council of instruction, consisting of 32 members.

The board (giunta) of the superior council, 14 in number.

The secretary's office of the superior council, comprising 3 persons.

The general direction of antiquities and fine arts, consisting of 28 persons.

This committee has charge of openings and excavations of antiquities, museums, pinacoteche, galleries, the preservation of monuments, academies and institutes of fine arts, rewards and subsidies for artists, artistic congresses, expositions of fine arts, societies for the promotion of fine arts, the schools of recitation, conservatories and institutes of music.

The permanent committee of fine arts, embracing painters, sculptors, and architects, with 12 members.

The permanent commission of musical and dramatic art, divided into two sections, composed of 6 persons each.

The office of the antiquities and monuments of Rome and the suburbs.

The division for superior instruction, embracing universities, institutes of superior instruction, astronomical observatories, academies of science and letters, historical institutes, deputations and societies of national history, consisting of 27 persons.

The division for secondary classical instruction, embracing lyceums, gymnasiums, national boarding schools, the college of examiners for lyceum licenses, and provincial scholastic councils, 25 in number.

The division for technical instruction, having charge of technical and nautical institutes and technical schools, composed of 21 persons.

The division for primary and popular instruction, having oversight of primary and popular instruction, normal schools, female teachers, institutes of the blind and deaf and dumb, asili, educational exhibits, popular libraries, scholastic inspectors and delegates, pensions, subsidies, etc., comprising 37 persons.

Accounts, 23 persons. This committee relates to such topics as estimates, expenses, inventories, property sequestrations and cessions, the registration of decrees and the publication of the Official Gazette.

(5) Every province has a provincial school council, composed of the prefect, who acts as president, of the provincial inspector, who acts as vice-president, and of ten councilors. This council has a general oversight of elementary, normal, and secondary schools within the province. It gives attention to school laws and regulations, sanctions the appointment of teachers, gives advice in regard to the educational budget and subsidies. It inspects private schools in regard to hygiene and morals, but not in respect to studies. The provincial inspector is the connecting link between the provincial council and the ministry of education at Rome. He has particular charge of classical, scientific, and normal instruction. District school inspectors, who must hold certificates of capacity, inspect the elementary schools twice a year. There are also subdistrict delegates, nonsalaried officers, appointed by the King for three years, who look after the elementary and secondary schools as representatives of the council.

To illustrate, the scholastic administration of the province of Alessandria was organized as follows for the year 1891: Councilors, including the president of the lyceum and the director of the female normal school, 10 in number, the royal inspector of studies, 6 scholastic inspectors, 70 scholastic delegates.

It should be added that the provincial council, or legislature, may vote, and sometimes does vote, subsidies to the elementary schools, although it is not responsible for their financial support.

(6) The part taken by the local governments, communes, municipalities, or cities in carrying on public instruction is extremely important. The elementary schools and many others, as will appear hereafter, are immediately under their charge. Upon them rests the principal burdens of popular education. As far as possible the school administration is

devolved upon the authorities and officers charged with the general administration of local government. The school board is a committee of the local legislature. The syndic, or mayor, is also intrusted with certain educational duties.

The foregoing will answer for a general account of the educational administration from top to bottom. It will be seen that it is much more elaborate, centralized, and rigorous than the administrative organization that any one of our States has yet ventured upon, not to say the United States. But this is in perfect harmony with continental ideas of governmental administration in general and educational administration in particular. In France and Germany we find an administration quite as strongly centralized.

THE ASILO.

The Kingdom of Italy presents to our consideration a considerable scope of elementary instruction and a considerable variety of schools. At the foot of the ladder we find the asilo, the Italian infant school, so called. Most asili are conducted after the Aporti method, which takes its name from the Abbate Ferrante Aporti, who founded it in 1847. The name is suggestive; the asilo is partly an asylum and partly a school; *un poco troppo scuola i troppo asilo*. But some asili, and an increasing number, are conducted according to Fröbel's system. The Baroness von Marenholtz-Bülou introduced the kindergarten into Italy, founding the first one at Venice in 1868, and a model school for the training of teachers at Florence three years later. The Hon. George P. Marsh, for many years the American minister near the King of Italy, also assisted in the work. However, the name "kindergarten" has never been naturalized. The asilo course covers the years 4 to 6, inclusive, and while mainly devoted to developing the child's body by gymnastics, his moral nature by examples, and his perceptive faculties by observation, it also introduces him to the use of books. The asili are carried on by the communes, by private citizens, or by associations. Admission to some is gratuitous, but to enter others a tuition charge must be paid.

For a time asili increased rapidly in number and in pupils, but recently less rapidly. For a time, too, the public asili increased rapidly, while the private ones fell off, but of late the first have relatively been losing ground. Witness the following:

Statistics of asili.¹

Year.	Asili.			Teachers.	Pupils.		
	Public.	Private.	Total.		Public.	Private.	Total.
1862	373	1,300	1,673	2,287	46,531	24,523	71,054
1863	1,379	363	1,741	5,068	191,968	27,941	218,908
1867	1,553	671	2,224	5,756	215,941	42,897	258,838

¹ For convenience of the reader statistics of a later date have been added. In 1891-92 there were 2,348 asili (public and private), with 6,135 teachers and 292,124 pupils.

The asili are most numerous in those parts of the Kingdom where the people are most intelligent and popular schools are best established. Of the total number, 1,253 are found in Piedmont and Lombardy alone.

DAY ELEMENTARY SCHOOLS.

Above the asilo stands the elementary school. However, those children who have not attended the asilo for any reason, or have not elsewhere received preliminary training, receive their first instruction in the elementary school, to which purpose the first year, if necessary, is accommodated.

The elementary school years are 7 to 11, inclusive, and are divided between two courses—an inferior course of three years and a superior course of two years. The school year is ten months, beginning the middle of October and closing the middle of August, with numerous holidays. The school week is five days and the school day four hours, with a half hour's recess.

The courses of study or programmes are prepared, in conformity to law, by the superior council of instruction, and are issued by the minister. They are uniform throughout the Kingdom. The following are the two courses, inferior and superior, published in the Calendar of Elementary Schools for the Province of Rome for the Scholastic Year 1891-92, over the name of the royal inspector of studies. But it may first be observed that text-books are selected by the local authorities from lists of books approved by the superior council of instruction. They are furnished at public expense for the use of the very poor. Thus, in the schools of Rome the visitor will find books bearing the stamp, "S. P. Q.R."

Programmes for the elementary schools of the province and city of Rome.

LOWER COURSE.

CLASS 1.—The Italian language. Exercises in reading and writing.

Object lessons.—Names and qualities of different objects to be found in schools and belonging to houses. The parts of the human body. Domestic animals. The division of time; hours, days, weeks, months, the year. The natural phenomena most observable in the different seasons.

Recitation of short poems committed to memory. Historical anecdotes. Anecdotes taken from Hebrew, Greek, and Roman history.

Arithmetic.—The writing of figures. Numeration, addition, and subtraction, mental up to 10, written up to 100.

CLASS 2.—The Italian language. Exercises in reading, explaining the words and sentences read. Writing from copies and under dictation. Poetry by heart. In the second half year the formation of words and simple sentences, containing if possible some observation made by the scholars, such, for example, as: Ink is black, snow is white, etc. Also in the second half year the sentences read should be parsed, pointing out the verbs, and distinguishing the present, past, and future tenses and the adjectives.

Object lessons.—The names and qualities of the most common fruits, vegetables, and grains. Names of the different parts of plants. The most common plants for the purposes of food, manufactures, and medicines. The most useful trades and professions. Qualities and names of clothing.

Writing.—Exercise in writing from copies in proper copy books, in order to form the hand to an easy and intelligible style.

Historical anecdotes.—Anecdotes taken from Hebrew, Greek, and Roman history.

Arithmetic.—The first four rules. Exercise in mental calculation on the figures from 1 to 9 and in writing from 1 to 1,000. Intuitive idea and written calculation of common fractions.

CLASS 3.—The Italian language. Fluent reading and according to the sense, viz, with proper pauses and just accentuation of the sentences and periods. Explanation of the words least in use, and repetition of the general sense of the piece read. Exercises in dictation, with special care of the punctuation and orthography. Practice of memory. Short and easy compositions, either from copies or according to the explanation of the master (letters, fables, comparisons between well-known things, etc.).

Gender and number of substantives. Personal pronouns, grades of comparison. Conjugation of auxiliary and regular verbs in sentences.

Object lessons.—Woods, minerals, and stones most in use. Facts most commonly observable in reference to the different properties of the body. Natural phenomena—the wind, rain, dew, frost, snow. Temperature, observable by the thermometer.

Writing.—Progressive exercises in proper copy books, as in the preceding class.

Geography.—Points of the compass; practice in the class rooms and in the courtyard of the school. Topographic plan of the city and commune, with practice on the slate in pointing out the direction of certain streets and the position of well-known places. Map of the province; rivers, lakes, mountains, and principal places.

History.—Relation of some of the principal facts regarding the formation of the Kingdom of Italy.

Arithmetic.—Practice in the first four rules, and answering questions without working out the sum. The four rules with decimal numbers taught practically. Practical method for reducing ordinary fractions to decimals. Weights and measures in ordinary use, with some reference to the weights and measures now in use in the commune.

UPPER COURSE.

CLASS 4.—The Italian language. Reading and explanation of the portion read. (The master should always make the pupils read and explain the lesson, and should then read it aloud himself, calling attention to the pronunciation, pauses, accentuation, etc., and afterwards make the pupils read it again.)

Exercise of memory.—Repeating poetry and prose extracts, short and easy compositions relating to things known to the pupils, in the shape of anecdotes or letters. Explanation of the exercises done in the class. Conjugation of the irregular verbs in the form of sentences; conjugation of the passive verbs; conjunctions, prepositions, and adverbs; practice in parsing; rules of punctuation.

Calligraphy.—Practice in penmanship, always, however, directed to the practical end indicated above.

Geography.—By the same method as that followed in the preceding class for the commune and the province; the master should draw Italy on the slate, tracing out the rivers, lakes, the direction of the chains of mountains, and marking the position of the cities, followed by the pupils, who will have the map before them. He should endeavor to make use of the geographical terms, explaining the words of which he makes use, such as peninsula, island, continent, sea, gulf, straits, harbor, etc.

History.—(First six months.) The foundation of Rome. The seven kings. Brutus. Horatius Cocles. Clelia. Menia Agrippa. Coriolanus. Cincinnatus. Camillus and the Gauls. The Punic wars. The Gracchi. Decline of the republic. Pompey and Cæsar. Emperor Augustus. (Second six months.) Barbarian invasion. Odoacer and Theodoric. Charlemagne. Frederic Barbarossa. The Crusades. Frederic II. Dante. Giotto. Vittor Pisani. Christopher Columbus.

Physics and natural history.—Most common plants in the flora of the country in relation to agriculture and their domestic utility. The most important minerals and their utility in regard to the uses of life. The effects of heat on the body.

Arithmetic.—Repetition of the four rules with decimal numbers, and problems which require at the most two sums. Measures of length, surface, volume, size, weight, etc.

Free-hand drawing of geometrical figures and definitions of the most important practical rules of measurement of squares and rectangles.

CLASS 5.—The Italian language. Reading and learning by heart as in the preceding class, taking care to choose poems and prose extracts which are less easy. Various styles of composition, historical anecdotes, short descriptions of things seen and well known, letters on the ordinary subjects of life, sometimes with some preparatory development of the theme furnished, sometimes without. At the end of the year the pupils should be able to write on a given theme with lucidity and sufficient correctness.

Rules regarding the use of the article. The conjunction and the pronoun. Active and passive participles and the gerundio. Parsing by sentences. Distinction between the principal and dependent proposition. Repetition of the principal grammatical rules.

Calligraphy.—Progressive exercises in a copy book of one line, so that the pupils may accustom themselves to measure by eye the length to be given to the letters.

Geography.—(First half-year.) Influence of the sun on the earth. Movements of rotation and revolution and the phenomena which result from both (day, night, and seasons). Axis of the earth. Poles. Equator. Meridians; latitude and longitude. Europe. Boundaries. Seas, mountains, rivers, lakes. States. Capital cities. (Second half-year.) The other quarters of the globe. Their position in regard to Europe. Boundaries. Seas and some of the principal cities.

History.—Charles VIII and Prior Capponi. Emmanuel Philibert and the house of Savoy. Masaniello and Italy under the Spanish dominion. Charles Emmanuel I and Victor Amadeo II. Napoleon I. Victor Emmanuel II. Cavour and Garibaldi.

Physics and natural history.—Principal organs of the human body. Their hygienic uses. Weight of bodies. Weight of the air and explanation of the most common phenomena dependent on it. The barometer. The pump. The three conditions of bodies, and in particular of water and the phenomena resulting from its change from one condition to another.

Arithmetic and geometry.—Reasoned explanations of the four rules in the science of numbers. General idea of common fractions. Reduction of fractions. Simplification of fractions. The four rules with common fractions. Transfer of common fractions into decimals. Alternate exercises on the four rules, sometimes with common fractions, sometimes with decimals. Repetitions on the metrical system. Connections and proportions. Simple rule of three, with method of reduction. Application to accounts of interest and partnership.

Practical rules of mensuration of quadrilaterals and the triangle.

To find the area of a regular polygon.

Practical rule for the measurement of the circle.

Definition of parallel and perpendicular lines.

Free-hand drawing and definition of solid forms (cube, prism, pyramid, cylinder, cone, sphere.)

The public elementary schools are divided into two classes, the regular and the irregular; the difference being that the irregular do not fulfill all the conditions as to time and studies. The courses given above

are those of the regular schools. "The Roman Calendar" contains also the unique or rural course (*unico. rurale*) as follows:

PROGRAMME OF THE COUNTRY SCHOOLS.

In the first and second sections of the country schools the teaching and exercises are the same as in the corresponding two classes in the city schools, only the master should as a rule omit, with the chance exception of more intelligent pupils, the recitation of poetry by heart. In the second section he also leaves aside all grammatical teaching, and should endeavor to supply its place by exercises in speaking and writing. With this notice of the first two sections, we give here only the programme of the third.

Section 3.—The Italian language. Fluent reading, making the pauses according to the punctuation. Call upon the pupil frequently to explain briefly what he has read. Exercise in dictation, the marks of punctuation and including orthography. Correction of the writing by use of the slate, and then reading of the writing corrected by the pupil.

Short and easy compositions, in the first half year from copies, and in the second from a given theme with explanations and suggestions from the master. In the second half year the master should prefer compositions in the form of letters, and subjects connected with domestic affairs, such as the pupils might hear spoken of in the family. In regard to grammar, the master should limit himself to explaining and accustoming the pupils to point out in the extract which has been read the substantives, adjectives, and verbs.

The object lessons and practice in observation should be, as to method, the same as that adopted in the city schools, except that, in the choice of things, the master should endeavor to adapt his lesson to the requirements of the country and to the local customs.

Geography.—Points of the compass, with practice in the school and courtyard. Drawing on slates the streets of commerce, pointing out the situation of the best known buildings. Drawing the map of Italy, pointing out the principal rivers of the division or province in which the school is situated, or of any large city.

History.—Short lessons on the principal events in ancient history, and on those circumstances which led the way to the unification of Italy.

Arithmetic.—Easy exercises in the first four rules in whole numbers and decimals. Practical ideas on the metrical system, avoiding the use of multiples, such as are not in common use, and if possible giving the pupils practice in weighing and measuring, with the help of the standard weights and measures. To give an idea by way of example of common fractions and the mode of writing them and forming them into decimals.

Duties.—Without making the subject of their duties a special matter of study or examination, the master should not neglect opportunities for making his pupils sensible of the duties which they owe toward God, toward their neighbors, and toward themselves; seeking above all to inspire them with a respect for justice and to cultivate such sentiments as constitute the most precious patrimony of civilization, and may conduce to an orderly, peaceful, and progressive state of society. It may be said that there is no branch of teaching which can not be led in this direction. In particular the master must not neglect to avail himself of the lessons in geography and history, in order to make the pupils understand what sacrifices have been required to make the constitution of Italy such as it is to-day, and how Italians can hope for no security but in the maintenance of the national unity.

There are also private elementary schools that are grouped by the statisticians with the regular public schools. These have the same division of courses.

Elementary schools of different kinds for the year 1886-87.

Schools.	Boys.	Girls.	Mixed.	Total.
Regular public	20,264	17,510	5,996	43,770
Irregular public	695	282	1,838	2,815
Private	2,086	4,311	1,210	7,607
Total	23,045	22,103	9,044	54,192

Distribution of pupils in elementary schools, 1886-87

Schools.	Inferior course.	Superior course.	Total.
Regular public	1,885,862	133,406	2,019,268
Irregular public			84,690
Private	138,829	36,303	175,132
Total	2,024,691	169,709	2,279,090

As observed further on, the small number of pupils in the superior course, while it helps out the ratio of school attendance to the number of children from 7 to 9 years of age, still shows how limited the average elementary instruction is in its range.

Elementary day schools and the pupils enrolled in them at different periods. a

Year.	Public schools.	Private schools.	Total.	Pupils in public schools.	Pupils in private schools.	Total.
1862.....	21,353	7,137	28,490	885,152	123,522	1,008,674
1868.....	29,909	6,414	36,323	1,350,066	134,466	1,481,532
1872.....	33,556	8,157	41,713	1,545,790	177,157	1,722,947
1878.....	39,702	7,906	47,608	1,830,749	171,960	2,002,709
1882.....	41,423	5,797	47,220	1,850,619	125,516	1,976,135
1887.....	43,770	7,607	51,377	2,019,268	175,132	2,191,400

a In 1891-92 there were 49,217 public day schools, with 50,819 teachers and 2,266,593 pupils. Private day schools, 8,395; teachers, 8,937; pupils, 187,346.

This table does not contain the statistics of the irregular public schools, which for some reason do not appear in the reports until 1884. If we add the 2,815 schools of this class with their 84,690 pupils, we have the same totals for 1887 as before, 54,192 schools and 2,279,090 pupils.

It appears from the above showing that while private schools have little more than held their own in thirty years, the public schools have more than doubled in numbers and in pupils. Then in Italy, as in the United States, a large majority of the pupils in private schools are girls. The ratio has not materially changed. In 1862 it was 51 boys to 71 girls; in 1887 it was 61 to 113.

The ratios of the pupils in elementary schools to the 100 of the total population, and the ratio to the 100 children of legal school age, show steady and healthy growth, as witness the following table:

Year.	Per 100 of population.	Per 100 from 6 to 12 years of age.		
		Boys.	Girls.	Total.
1862.....	4.63	41.7	32.3	37
1868.....	5.54	50.7	37.3	44
1872.....	6.43	55.6	45.9	51
1878.....	7.01	61.2	54.8	58
1882.....	6.94	60.6	54.7	58
1883.....	7.15	61.3	57.2	59
1884.....	7.33	62.6	58.4	61
1885.....	7.48	64.7	59.5	62
1886.....	7.64	65.5	60.8	63
1887.....	7.71	66.5	60.7	64

Still, it must be remarked that these ratios are to some extent misleading. The base of the computation changes but once in ten years, while the percentage changes every year. In other words, the number of children of legal school age is obtained from the decennial census, while the attendance at the schools is furnished by the teachers' registers.

Again, it is well known that in societies where education is backward a smaller proportion of girls than of boys attend school. This is the case in Italy. But it will be observed that the girls are steadily gaining ground. In 1862 the ratio of girls to boys was, practically, 33 to 52; in 1872 it was 64 to 88; in 1882, 84 to 100; in 1887, 92 to 109. Or, to put the case in another way, while in 1862 but 32.8 per cent of the girls from 6 to 12 years of age were enrolled in elementary schools, 53.3 per cent were enrolled in 1876 and 62.7 per cent in 1887.

EVENING AND HOLIDAY ELEMENTARY SCHOOLS.

The day elementary schools, public and private, are supplemented by evening and holiday schools. These are similar to the continuation schools of Germany—that is, they give students who can not go, or who do not wish to go, to the secondary schools an opportunity to expand and supplement their elementary school studies. They also afford certain advantages to persons whose elementary instruction has been for any reason defective. The holiday schools are held, as their name (*festive scuola*) implies, on religious holidays, of which the number in Catholic countries is very large. The following table shows for the year 1886–87 the most important facts relating to these two classes of schools:

	Evening.a	Holiday.a
Number of schools.....	5,983	4,380
Number of teachers.....	6,002	4,397
Boys enrolled.....	217,149	23,684
Girls enrolled.....	4,857	102,155
Total pupils.....	222,006	125,839

a In 1891–92, night schools, 4,241; pupils, 147,607. Holiday schools, 2,890; pupils, 76,694.

The teachers in the evening schools were 5,485 men and 517 women; in the holiday schools, 707 men and 3,690 women.

In all, 347,847 students were instructed in the evening and holiday schools. The statistics show a considerable fluctuation at different times. These schools culminated, both in number and in pupils, in 1879.

Number, etc., of evening and holiday schools at different times.

Year.	Evening schools.			Holiday schools.		
	Number.	Teachers.	Pupils.	Number.	Teachers.	Pupils.
1863.....	2,803	3,462	108,170	495	571	16,021
1872.....	9,809	11,548	375,947	4,743	5,020	154,565
1879.....	11,633	11,633	455,687	6,571	6,571	212,439
1882.....	6,295	6,295	248,012	3,895	3,895	122,107
1887.....	5,983	6,002	222,006	4,380	4,397	125,839

THE TEACHERS OF ELEMENTARY SCHOOLS.

The Casati law demanded of teachers certificates of qualification. Now, the policy is to require of them a normal school training as well. For normal teachers in the lower grade elementary schools, this training is two years; in the higher grade schools, three years. The lower grade certificate covers the catechism and Bible history, the Italian language, reckoning, the metric system, penmanship, and pedagogy. The higher grade certificate takes a much wider range: Religion, composition, history of literature, arithmetic and bookkeeping, elements of geometry and of natural science, history, geography, penmanship, and pedagogy. Private school teachers must hold certificates equal to those held by teachers of corresponding position in the public schools. Of holiday school teachers these requirements are not made.

Teachers in the public schools receive their appointments from the communal council, subject to the approval of the provincial council. No person under 18 years of age can receive an appointment. Sometimes a probation of six months is prescribed. Until the age of 22 is reached, the appointment is for one year only; after that it may be two years or even permanent. Appointments in private schools are made by the manager or managers, but subject to the confirmation of the provincial inspector.

The wages of public school teachers are fixed by the communal council, subject to certain legal regulations. The law of April 11, 1886, establishes minimum limitations which are uniform throughout the Kingdom. Salaries can not fall below the limits fixed in the following table:

Teachers' salaries in public elementary schools.

	Class I.		Class II.		Class III.	
	Men.	Women.	Men.	Women.	Men.	Women.
City schools:	<i>Lire.</i>	<i>Lire.</i>	<i>Lire.</i>	<i>Lire.</i>	<i>Lire.</i>	<i>Lire.</i>
Superior grades.....	1,320	1,056	1,110	880	1,000	800
Inferior grades.....	1,000	800	950	700	900	720
Country schools:						
Superior grades.....	900	720	850	680	800	640
Inferior grades.....	800	640	750	600	700	560

On January 30, 1892, there were employed in Rome and its suburbs 582 elementary teachers, 188 men and 394 women. The 9 male city principals (*direttori*) received each 3,000 lire per annum, the 6 rural principals each 2,200 lire. Of the men teaching in the city, 71 received 2,400 lire; 54, 2,200; 14, 1,900; 31, 1,600 lire. Of the men teaching in the suburbs, 1 received 1,800 lire; 7, 1,600; 7, 1,200, and 3,720 lire.

The 14 city women principals (*direttrici*) received each 2,000 lire, and the 8 rural principals 1,800 lire per annum. Of the women teaching in the city, 49 received 2,100; 44, 2,000; 65, 1,800; 74, 1,500; 134, 1,200 lire; 19 teachers on trial, 800 lire. Of the women teaching in the suburbs, 2 received 1,400 lire; 6, 1,200; 1, 1,000, and 9 assistant teachers from 360 to 480 lire. In Rome salaries in general are subject to an increase every five years.

The relative numbers of male and female teachers is worthy of investigation. The figures are given in the following table:

	Men.	Women.	Total.
Public schools:			
Irregular.....	1, 739	991	2, 730
Regular:			
Superior grades.....	2, 866	2, 451	5, 317
Inferior grades.....	16, 118	23, 833	39, 951
Total.....	20, 723	27, 275	47, 998
Private schools.....	2, 498	6, 399	8, 846
Total.....	23, 221	33, 674	56, 895

a The total in 1891-92 was 59,771: Public school teachers, 50,819; private, 8,395.

The ratio throughout the Kingdom is 23.221 men to 33.674 women, or practically 2 to 3. In Lombardy the ratio is 26 to 52. In six compartments in the southern part of the peninsula and in Sicily there are more men than women. The disparity between the northern and southern provinces is owing no doubt to causes similar to those that make the relative number of men teachers in New England so much smaller than those in the Southwestern States and Territories. In well educated, prosperous, and wealthy communities teachers' salaries are less inviting to men; society being more civil and orderly there is less need of the muscular virtues; there is less prejudice against women teachers or possibly a prejudice in their favor, while there is an adequate supply of well-qualified women anxious to engage in the work.

SCHOOL SUPPLY AND COMPULSORY EDUCATION.

The law strictly defines the minimum duty of the city, town, or commune in respect to providing elementary instruction. It must maintain a sufficient number of schools to accommodate the children of legal school age seeking their advantages. More definitely, the rules are these:

- (1) Every town must maintain at least one school of the lower course or grade for boys and one for girls.

(2) Every town of more than 4,000 inhabitants, or a town of any population where a normal school or a secondary school exists, must also maintain a school or schools of the higher grade.

(3) No school having but one teacher shall contain more than 70 scholars. Where a school has more than that number for a month, the authorities must open another school in a different locality.

The Casati law required heads of families to provide for their children as much instruction as is covered by the inferior elementary course. This law not proving effective, a more stringent one was enacted in July, 1877, to take effect at the beginning of the ensuing scholastic year. The compulsory years are 7, 8, 9, but if the minimum of instruction required is not obtained in those years, then the period may be extended to 10 or even 12 years. The provisions relating to compulsion are contingent upon the provisions relating to school supply. They may be formulated as follows:

(1) Children of the stipulated ages must be sent to school when living in towns of less than 5,000 inhabitants, having one school of lower grade for every 1,000 persons.

(2) They must also be sent when living in towns having a population of from 5,000 to 20,000, supporting an elementary school for every 1,200 persons.

(3) Also when living in the larger communes, maintaining a school for every 1,500 persons.

Parents have, however, the option of sending their children to private schools, or of educating them at home, provided the instruction given is equal to that of the public schools. This last fact the State by its rules in relation to teachers and instruction seeks to ascertain.

The penalties for disregarding the law are pecuniary. The fine is 50 centimes (10 cents) a month for each child for absence for the first three months of the scholastic year; after that it is increased to 3 francs a month, and may be increased to 10 francs (\$1.93). The school authorities are authorized to consider the reasons for noncompliance with the law, deciding whether they are sufficient or not.

At the end of the scholastic year 1886-87 the supervising authorities reported that 8,178 communes in a total of 8,257 were meeting the legal conditions of school supply. But it does not, therefore, follow that the law requiring school attendance is observed in all the communes of the Kingdom but 79. In Italy, as in other countries, the enforcement of education depends upon certain well-known conditions: The reasonableness of the compulsory provisions; the vigor of the central and local authorities; the economical condition of the people; the intellectual level, and the educational spirit of communities and individuals.

Unfortunately, we have no adequate means of determining how generally the law is complied with.

According to the last census, taken in 1881, there were 3,440,000 children of legal school age, 7 to 11, inclusive. The school registers for the scholastic year 1886-87 show that 2,279,090 children of those ages were enrolled in schools of elementary instruction. This is about 68 per cent of the total number of school age, and 7.60 per cent of the

total population reported in 1881. The two dates involving the comparison are six years apart; but, it must be remembered, that population in Italy increases slowly, as measured by American standards. The same year the youth of compulsory school age were 1,808,129 in number; that is, youth between the ages of 7 and 9, both inclusive.

Some light is thrown upon the subject by certain statistics already given for another purpose. Of 2,279,090 pupils enrolled in elementary schools in the year 1886-87, only 169,709 were in the superior course. In other words, the vast majority of the pupils, as measured by their school standing, fell within the compulsory years. But while this fact helps out the ratio of the school attendance to the total number of children within the compulsory years, it still makes a bad showing for elementary education as a whole.

Competent judges tell us, what indeed we should antecedently expect, that in those communes where the conditions are most favorable the law is well executed, but that in communes where population is unstable, the people poor, ignorance dense, or education but lightly esteemed, the law is not very effective. Still more is this true in communities where two or more of these conditions exist.

"J. W. M.," writing in *The Nation*, gives a graphic account of life in the Sicilian sulphur mines, and particularly of the degradation of children. The following may be quoted:

Attempts have been made by benevolent citizens not interested in mining gains to better their condition. Evening schools are opened, and it is wonderful how many tired, wretched children frequent them. Mutual aid societies, for pay during illness and for burial expenses, you find here and there, but these are poultices on cancer, and nothing more. Here we want missionaries—a Mazzini, a Lloyd Garrison, Mrs. Fry, Lucretia Mott, the Rochdale pioneers—to get hold of the children—of their mothers; to stir up public opinion until, while the "sacred rights of property" are respected, the sacred rights of humanity shall not be openly, flagrantly, brutally violated. Here, indeed, the young men who spout at clubs and twaddle in newspapers might find a grand field for labor; find an "ideal" which they complain is wanting to their generation. Communal, provincial, State authorities are called upon by these "reformers" to mend all; but they can do next to nothing until the mining populations combine to will an altered state of things—not by partial, useless, and lawless strikes, seeing they save not a farthing for the time when they are out of work, but by bringing their wants and wills, their sufferings and their wrongs, to bear on the absentee proprietors and the sweaters, etc. The time will come, is coming; but now one can only exclaim, with wrung heart and harrowed soul, "How long, oh Italy! how long!"

NORMAL SCHOOLS.¹

In 1887-88 there were in Italy 134 normal schools—36 for male and 98 for female students. These schools may be classified both with respect to their support and management and their degree or rank.

Divided in the first way, 82 are Government schools and 21 equal to Government schools (*pareggiate*). Of the latter, 15 are provincial schools, 4 communal, 1 endowed, and 1 private. The 8 other normal

¹In 1891-92 there were 149 normal schools—36 inferior, 113 superior, or 24 for men and 125 for women. Students numbered 18,029 (men, 2,135; women, 15,898).

schools are described as not equal to the Government schools (nonparegiate); 4 of these being supported by provinces, 2 by communes, and 9 by endowments, while 16 are private. These nonequal schools arrange their own courses of study.

The 134 schools are also divided as superior and inferior. The first class consists of 108 schools—28 for males and 80 for females; the second class of 26 schools—8 for males and 18 for females. The superior schools cover six years of instruction—three preparatory and three normal; the inferior, five years of instruction—three preparatory and two normal. The studies are the same in both courses, but differ in quantity and somewhat in distribution, the main difference being in the normal instruction proper.

Time-table of the classes of the superior normal schools.

Instruction and practical exercises.	Hours per week of the classes.					
	Preparatory.			Normal.		
	I.	II.	III.	I.	II.	III.
Pedagogy.....				2	3	3
Morals.....				1	1	1
Italian language and literature.....				4	4	4
Arithmetic, geometry, and bookkeeping.....	3	3	5	2	2	1
Science, physical and natural, precepts of hygiene and domestic medicine.....	2	2	2	2	3	3
History and geography.....	4	4	4	5	4	4
Drawing.....	2	2	3	2	2	2
Penmanship.....	2	2	3	1	1	1
Singing.....	2	2	2	2	1	1
Gymnastics.....	2	2	2	2	1	1
Domestic work.....			3	3	2	2
With the assistance of the teacher of pedagogy.....				2	2	2
With the assistance of other teachers.....					2	3
Under the supervision of the teachers of the elementary school.....					2	3
Total.....	26	26	26	23	30	30

The total is 166 hours, of which 116 are given to instruction, and 50 to practical lessons.

In the boys' schools lessons in drawing, manual labor, and agriculture take the place of the lessons in domestic economy. Schools for practice work are found in connection with the normal schools. Candidates for admission to the normal grades, if males, must be 16 years of age; if female, 15 years. They are subjected to a preliminary examination, oral and written, in grammar, arithmetic, the catechism, and Bible history. They must also present certificates of moral character and physical health.

Normal schools and normal school pupils, 1886-87.

Schools.	Boys.		Girls.		Total.
	Preparatory.	Normal.	Preparatory.	Normal.	
Government.....	125	1,006	2,827	3,850	7,808
Pareggiante.....	38	245	698	850	1,831
Nonpareggiante.....			508	913	1,421
Total.....	163	1,251	4,033	5,613	11,060

Fifty-eight of the 69 provinces contain one or more normal schools each; 21 contain 2 or more, while 6 have 3. To the support of these schools the State, in 1889, contributed 1,813,000 lire, the provinces 632,000, making a total of 2,445,000 lire. (§671,885).

Normal-school salaries.

Superior schools:

Professors titled—	Lire. ¹
Class I.....	2,640
Class II.....	2,160
Class III.....	1,800
Teachers adjunct and preparatory course—	
Class I.....	1,500
Class II.....	1,200

Inferior schools:

Professors director.....	2,000
Teachers adjunct.....	1,600
Teachers in preparatory course.....	1,100
Teachers in practice schools.....	1,200

Certificates granted, 1886-87.

	Men.	Women.	Total.
Inferior grade.....	425	995	1,420
Superior grade.....	324	1,448	1,772
Total.....	749	2,443	3,192

All the tests show that the normal schools have made satisfactory progress.

Schools and pupils at different periods.

Year.	Schools.	Students enrolled.		
		Boys.	Girls.	Total.
1862.....	.....	947	2,795	3,742
1872.....	115	1,631	4,479	6,110
1882.....	121	1,383	7,482	8,865
1887.....	134	1,414	9,646	11,060

It will be seen that the girls have increased much more rapidly than the boys. This fact has an important bearing upon the relative number of the sexes employed as teachers, to which topic attention has been drawn in another place.

The Government schools have also increased more rapidly than the non-Government. In 1871-72 there were 59 of the first to 56 of the second; in 1887-88 the ratio was 83 to 54. In 1882 there were 5,440 pupils in the Government schools and 3,325 in the non-Government schools; in 1887 the ratio was 7,808 to 3,252.

The qualifications of teachers, supposing the examination tests to have remained the same, have also been steadily improving. If, as is probable, the tests have become more severe, the improvement has been still more marked.

Table showing grades of certificates at different periods.

Year.	Inferior.	Superior.	Total.
1862	2,029	604	2,633
1867	1,014	868	1,882
1883	1,267	1,857	3,124
1887	1,420	1,772	3,192

Salaries of normal school professors.

SUPERIOR SCHOOLS.

	Class I.	Class II.	Class III.
	<i>Lire.</i>	<i>Lire.</i>	<i>Lire.</i>
Professor titular.....	2,640	2,160	1,800
Teacher adjunct.....	1,500	1,300	.....
Teacher assistant.....	1,500	1,200	.....

a 19.3 cents to the lira.

INFERIOR SCHOOLS.

	<i>Lire.</i>
Professor director.....	2,000
Teacher adjunct.....	1,600
Teacher preparatory.....	1,400
Teacher of practice school.....	1,200

Elaborate regulations for normal schools of gymnastics were issued in 1890. The programme of the school for men embraces the theory of gymnastics, the novitiate and school of command, practical gymnastics, military exercises, anatomy, physiology, and hygiene, the pedagogy and history of gymnastics, drawing and choral singing. The programme for women includes the same subject matter, with the exception of military exercises and drawing.

SECONDARY CLASSICAL SCHOOLS.

Gymnasiums and lyceums (ginnasi and licei).—The full period of secondary classical instruction is eight years, five in the gymnasium (ginnasio) and three in the lyceum (liceo). The gymnasium is again divided into an inferior course of three years and a superior one of two years. Only boys are admitted to these schools. The gymnasium receives them from the elementary school, and they pass from the gymnasium to the lyceum.

Some of the gymnasiums and lyceums belong to the Government and some do not, and those that do not are divided into the pareggiate and the nonpareggiate, or those that are equal and those that are not equal to the Government schools. The pareggiate are divided into the communal and the endowed; the nonpareggiate into the communal, the endowed, the episcopal, and the private. The following table shows the status of the gymnasiums and lyceums in respect to rank and maintenance in 1887. It should be premised, however, that the provision of secondary schools and attendance upon them are wholly optional. The only compulsory education in Italy is that given in the inferior elementary course.

	Gymnasiums.	Lyceums.	Total.
Government.....	148	104	252
Pareggiate:			
Communal.....	56	22	78
Endowed.....	22	5	27
	78	27	105
Nonpareggiate:			
Communal.....	67	7	74
Endowed.....	39	4	43
Episcopal.....	255	123	378
Private.....	141	55	196
	502	189	691
Total.....	728	320	1,048

a In 1890-91 there were 350 public gymnasiums with 36,482 pupils, 383 private gymnasiums with 20,255 pupils. Lyceums, 143 public, pupils 10,360; 167 private, pupils 4,654.

The large number of episcopal schools shows that the church has a vigorous hold of secondary education. There were enrolled in the various episcopal gymnasiums 14,056 students, in the lyceums 2,874, or 16,930 in all. The ratio of outsiders to boarders in these schools is also quite significant—3,582 of the first class to 13,348 of the second. Almost any afternoon in the school season a passenger on the streets of Rome will see one or more groups of boys in uniform taking a constitutional, or rolling over the pavement in an omnibus, who belong to some church college, in charge of the person in ecclesiastical attire. The name “college” occupies a distinctly lower place in the Italian educational vocabulary than in our own. It is applied, popularly at least, to boys’ and girls’ schools of elementary and secondary learning. The Collegio Romano or Roman College is a gymnasium and a lyceum combined under a common management.

These schools are scattered over the Kingdom. Every province has at least one of each kind. Naples has the largest number of any province, 59 gymnasiums and 35 lyceums, but they are nearly all of the nonpareggiate class. Grosseto alone has a single school of each kind, but 10 other provinces have only a single lyceum each. The following table shows the distribution of the secondary classical schools by compartments:

	Gymnasiums.		Lyceums.		Total.	
	Number.	Pupils attending.	Number.	Pupils attending.	Schools.	Pupils.
Piedmont.....	71	6,419	38	1,658	109	8,077
Liguria.....	28	2,323	14	631	42	2,954
Lombardy.....	56	5,224	30	1,659	86	6,883
Venetia.....	32	3,501	19	1,111	51	4,612
Emilia.....	56	3,619	34	1,075	90	4,694
Tuscany.....	66	3,608	25	800	91	4,408
Marches.....	45	1,830	27	460	72	2,290
Perugia.....	32	1,096	13	215	105	1,311
Rome.....	88	2,497	14	625	52	3,122
Abruzzi.....	22	1,327	8	281	30	1,608
Campania.....	112	7,256	57	2,582	169	9,839
Puglia.....	49	2,977	12	640	61	3,617
Basilicata.....	12	513	7	84	19	597
Calabria.....	22	1,588	5	305	27	1,893
Sicily.....	67	5,054	19	1,418	86	6,472
Sardinia.....	12	1,300	3	184	15	1,484
Total.....	728	50,132	320	13,728	1,048	63,860

All the schools are subject to the Government inspection. The courses of study in the Government and pareggiato schools are prepared by the superior council of instruction. The professors and teachers in the Government schools are appointed by the minister. The pupils are divided into two grand classes, boarders (convittori) and outsiders (esterni). The distinction is somewhat but not altogether like that between the interns and the externs of the monastic schools of the Middle Ages. The boarders are accommodated in establishments called convitti, in which elementary schools for fitting pupils for the classical schools are also carried on.

Table showing the number of pupils and instructors in gymnasiums, 1887-88.

	Outsiders.	Boarders.	Total.	Instruct- ors.
Government.....	14,580	2,612	18,192	1,237
Pareggiato.....	4,827	2,174	7,001	651
Nonpareggiato.....	9,806	15,183	24,989	2,094
Total	29,213	20,919	50,132	4,982

Convitti are a prominent feature of the Italian system of education. They are found also in connection with the normal schools.

Number of pupils and instructors in lyceums, 1887-88.

	Outsiders.	Boarders.	Total.	Instruct- ors.
Government.....	6,895	725	7,620	917
Pareggiato.....	866	349	1,215	228
Nonpareggiato.....	1,995	2,898	4,893	992
Total	9,756	3,972	13,728	2,137

From the two tables we deduce the following results:

	Outsiders.	Boarders.	Total.	Instruct- ors.
Gymnasiums.....	29,213	20,919	50,132	4,982
Lyceums.....	9,756	3,972	13,728	2,137
Total	38,969	24,891	63,860	7,119

^a This total contains all directors of gymnasiums, presidents of lyceums, and teachers of gymnastics, as well as all professors and teachers of every kind.

The following table shows the number of pupils who were licensed on final examination:

Inferior gymnasiums.....	1,122
Superior gymnasiums.....	5,289
Total gymnasiums.....	6,411
Lyceums.....	3,201

The secondary schools, as a rule, are small. The gymnasium of average size contains but 68 pupils; the average lyceum but 42. The average number of instructors per gymnasium, counting all the classes, ranges from 5.10 to 7.07; per lyceum, from 3.70 to 7.04. It will be seen, therefore, that the teaching force is. relative to the number of students, very large.

The salaries in the public secondary schools are fixed by law. The professors are divided into two classes, titular and regent. The former are appointed by the King on the recommendation of the minister, the latter by the minister. The titular professor is selected by competition from persons who hold the degree of university doctor in the science or department of study for which they are competing, or he must hold other legal certificate. A previous examination is not necessary in the case of the regent if he hold a suitable normal diploma, but he can not be promoted to the higher grade without it.

GYMNASIUM SALARIES.

	Class I.	Class II.	Class III.
	<i>Lire.</i>	<i>Lire.</i>	<i>Lire.</i>
Director.....	2,400	2,160	1,920
Professor titular:			
Superior class.....	2,400	2,160	1,920
Inferior class.....	2,160	1,920	.....
Professor regent:			
Superior class.....		1,800	.....
Inferior class.....		1,728	.....
Instructor in gymnastics.....			800

LYCEUM SALARIES.

President.....	3,600	3,000	2,400
Professor titular.....	2,640	2,400	2,160
Professor regent.....		1,800	.....

The courses of study are shown with sufficient fullness in the following time-tables:

Hours per week for each class of the inferior gymnasium.

Subjects assigned.	I.	II.	III.
<i>Obligatory.</i>			
The Italian language.....	7	7	7
Latin language.....	7	7	7
The national history.....	2	2	2
Descriptive and political geography.....	2	2	2
Arithmetic and ideas of natural science.....	2	2	2
	20	20	20
<i>Optional.</i>			
The French language.....	2	3	3
Drawing.....	2	3	3
Total.....	24	26	26

Hours per week for each class of the superior gymnasium and the lyceum.

Subjects assigned.	Superior gymnasium.		Lyceum.		
	IV.	V.	I.	II.	III.
Italian language and literature.....	5	6	5	4	4
Latin language and literature.....	6	5	6	3	3
Greek language and literature.....	3	3	3	3	3
Civil history.....	3	3	3	3	3
Historical geography.....	1	1	1	1	1
Philosophy.....			2	2	2
Mathematics.....	2	2	3	3	3
Physics and chemistry.....			1		3
Natural history.....	2	2	1	2	2
Total.....	22	22	24	24	24

The mathematics taught in the superior gymnasium and the lyceum is rational arithmetic, algebra, geometry, and plane trigonometry. The philosophy taught in the lyceum is descriptive psychology, formal logic, and ethics.

It will be seen that in the secondary classical schools 45 hours are assigned to the national language and literature, 43 to Latin, and 15 to Greek, making 101 to such studies; 21 to history, 11 to geography, 16 to mathematics (dividing the six hours assigned to arithmetic and natural science equally), 6 to philosophy, and 19 to science. This makes 176 hours in all, not counting the optional studies, which make 16 hours more. Religious instruction is not given in the public secondary schools.

The tables published by the Government do not give as full a view of the history of secondary classical instruction as we could desire. We know the number of Government schools and the attendance upon them year by year since 1862, but we have no similar information of the other secondary schools previous to 1880. From 1862 to 1879, inclusive, the Government gymnasiums increased from 93 to 109 and the lyceums from 67 to 83; in the same period the students attending these schools increased from 7,221 to 11,603, and from 3,005 to 5,775, respectively. Since 1879 the general movement is shown below.

Number of gymnasiums and lyceums and the number of pupils in the same at different periods.

Year.	Gymnasiums.		Lyceums.		Total.	
	Number.	Pupils.	Number.	Pupils.	Number.	Pupils.
1880.....	692	37,915	278	10,356	970	48,270
1884.....	734	45,110	341	13,674	1,075	58,784
1888.....	728	50,132	320	13,728	1,048	63,860

A more careful analysis would show that in this period the Government and pareggiate gymnasiums increased from 179 to 226, the episcopal from 221 to 255, while the public nonpareggiate diminished from 146 to 106, and the private from 148 to 141. In the Government, pareggiate, and episcopal schools the pupils increased about 50 per cent. The Gov-

ernment and pareggiate lyceums increased from 105 to 131, the episcopal from 104 to 123, the private lyceums gained 5 and the public nonpareggiate lost 8. The movement of students corresponded to the movement of schools.

Upon the whole, the Government, the pareggiate, and the episcopal secondary classical schools appear to have attained a practical relative equilibrium.

SECONDARY TECHNICAL SCHOOLS.

Schools and institutes.—Formerly there was small opportunity in Italy, as in other countries, for students to carry on studies outside of the traditionary lines, in which the main emphasis was placed on the Greek and Latin classics. But in response to the demands of the more modern spirit there has been developed a complete system of technical or scientific instruction, running parallel with the old secondary schools and with the university. This system consists of the superior technical institutes and of the secondary technical institutes.

The secondary schools serve two main purposes—they prepare students for the more advanced instruction of the superior institutes, and they give others who are not able to pursue the higher instruction, or who do not wish to do so, a much-needed discipline, and a preparation for practical life that they could not secure in any other way; and in one point of view it is an encouraging fact that the second class is much the larger of the two.

These institutions are of two kinds—the technical schools and the technical institutes. The organization of both is as old, at least, as the Casati law. The technical school is intended for boys from 11 to 14 years of age; it sends some students to the secondary institute, but a larger number immediately to practical life. Candidates for admission are examined in the elements of arithmetic, in penmanship, and in the Italian language. The following table shows the studies taught, and the number of hours weekly in each study, on the basis of the class:

Studies.	Classes.			
	I.	II.	III.	III.
Penmanship	3	2	2	2
Bookkeeping				5
Drawing, ornamental	6	2	4½	3
Geometrical and freehand geography	2	2	2	2
The French language	2	5	3	4
The Italian language	6	6	6	4
Mathematics, arithmetic, and geometry	4	4	5	4
Moral ideas and the duties of the citizen			1	1
Ideas of physics, chemistry, and mineralogy				2
Ideas of natural history		2	2	2
The history of Greece			2	
The history of Italy	2	2	2	2
Total	25	27½	29½	31

It will be seen that Class III is twice given. Students who pass for the institute take the work set down in the first column so marked;

those who pass for a license, the work in the next column. The first two years are common in both courses. The studies peculiar to the second course are chosen with especial reference to practical life.

The technical institute presents five courses of study—physico-mathematical, land surveying, trade and computation, agriculture, and industry. For the first two years the studies in the five sections are the same; in the third and fourth years the different courses differ widely, although containing studies in common.

The physico-mathematical section prepares pupils for the faculty of mathematics and science in the universities, for certain higher institutions of scientific instruction, and for the naval school at Genoa. Graduates from the other sections are fitted for the practical pursuits that their names suggest.

Time-table of the physico-mathematical section.

[Hours a week.]

Studies.	Classes.			
	I.	II.	III.	IV.
Chemistry			3	4
Ornamental drawing	6	6		
Architectural drawing			4	6
General physics			5	
Complementary physics				3
Geography	3	3		
Italian literature	6	5	4	6
The French language	3	3	2	
English or German language		3	5	5
Logic and ethics		2		
Mathematics	6	5	5	5
General history	3	3	2	
Zoology and botany	3			
Mineralogy and geology		3		
Total	30	33	30	29

Time-table of the section of land surveying.

[Hours a week.]

Studies.	Classes.			
	I.	II.	III.	IV.
Agriculture			2	3
Agricultural bookkeeping			2	
Constructions			2	2
Drawing of constructions		2	3	3
Chemistry			3	4
Ornamental drawing	6	4		
Taxation				4
General physics			5	
Geography	3	3		
Rural legislation				2
Italian literature	6	5	4	6
The French language	3	3		
Logic and ethics		2		
Mathematics	6	5		
General history	3	3	2	
Zoology and botany	3			
Mineralogy and geology		3		
Topography			3	9
Topographical drawing		3	3	
Descriptive geometry			3	
Total	30	33	32	33

Time-table of the section of commerce and bookkeeping.

[Hours a week.]

Studies.	Classes.			
	I.	II.	III.	IV.
Penmanship		2	1	2
General chemistry			3	
Bookkeeping and computation		4	5	9
Civic duties			3	
Commercial and administrative duties				4
Ornamental drawing	6			
Political economy			3	
Financial and statistical science				4
General physics			5	
Geography	3	3		
Italian literature	6	5	4	6
The French language	3	3	2	2
The English or German language		3	5	5
Logic and ethics		2		
Mathematics	6	5		
Zoology and botany	3			
Mineralogy and geology		3		
General history	3	3	2	
Total	30	33	33	32

Time-table of the section of agriculture.

[Hours a week.]

Studies.	Classes.			
	I.	II.	III.	IV.
Agricultural science			3	6
Chemistry			4	9
Ornamental drawing	8	6		
Elements of topography and construction			6	
Physics		3	3	4
Geography	3	3		
Rural legislation				2
Italian literature	6	6	4	2
The French language	3	3		
Mathematics	6	6		
General history	3	3		
Botany	2			
Zoology		2		
Geology and mineralogy			3	
Applications of natural history to agriculture			2	
Total	31	32	25	23

Time-table of the industrial section.

[Hours a week.]

Studies.	Classes.			
	I.	II.	III.	IV.
General chemistry and elements of organic chemistry			4	
Ornamental drawing	8	6		
Elementary physics		3	3	
Geography	3	3		
Italian literature	6	6	4	
The French language	3	3		
Mathematics	6	6		
General history	3	3		
Botany	2			
Zoology		2		
Geology and mineralogy			3	
Total	31	32	14	

The secondary scientific institutions, like the secondary classical schools, are classed as government, pareggiate, and nonpareggiate. The following table shows the number of technical schools, their distribution in the classes just named, and the number of teachers and pupils:

	Schools.	Professors.	Pupils.
Government.....	143	1, 119	14, 899
Pareggiate.....	99	764	8, 328
Nonpareggiate.....	167	1, 145	6, 411
Total.....	409	3, 028	29, 638

Or, if we add the directors without teaching duties and teachers of gymnastics, we have a grand total of 3,487 teachers.

The pareggiate schools are, 3 provincial, 89 communal, and 7 endowed. The nonpareggiate are, 66 communal, 20 endowed, 3 episcopal, and 78 private.

Four thousand four hundred and fifty students were examined for licenses and 3,248 were licensed in these schools in 1887.

Technical institutes.	Institutes.	Professors.	Pupils. and auditors.
Government.....	51	968	4, 599
Pareggiate.....	13	202	885
Private.....	6	79	204
Total.....	70	1, 249	5, 688

Or, adding presidents without teaching functions and teachers of gymnastics, we have a total of 1,317. Five of the pareggiate institutes are provincial, 7 communal, and 1 endowed. The 6 nonpareggiate are all private.

Of the students enrolled in the technical institutes 3,155 were pursuing the common studies of Classes I and II. The 2,533 remaining were distributed among the five sections as follows: Physico-mathematics, 766; land surveying, 740; agriculture, 22; the commercial course, 923, and the industrial, 82. One thousand four hundred and eighty-five students were examined and 972 were licensed.

The students licensed were distributed as follows among the five sections: The physico-mathematical, 278; land surveying, 293; agriculture, 7; commerce, 372; industry, 22.

The salaries of the professors of the Government secondary technical schools and institutes are shown in the following tables:

TECHNICAL SCHOOLS.

	Class I.	Class II.	Class III.
	<i>Lire.</i>	<i>Lire.</i>	<i>Lire.</i>
Director.....	2,400	2,160	1,920
Professor titular:			
First class.....	2,400	2,160	1,920
Second class.....	2,160	1,920	1,680
Professor regent:			
First class.....	1,920	1,728	1,536
Second class.....	1,728	1,536	1,344
Commissioned teacher.....	1,844	1,176	1,008

TECHNICAL INSTITUTES.

	Class I.	Class II.	Class III.
	<i>Lire.</i>	<i>Lire.</i>	<i>Lire.</i>
Professor titular.....	2,640	2,400	2,160
Professor regent.....	2,112	1,920	1,728

The commissioned teachers in the institutes receive an annual stipend proportionate to the work that they actually perform.

The professors titular in the Government schools and institutes are appointed by the King, on recommendation of the minister of public instruction; the professors regent, by the minister. But there are no competitive examinations to test the fitness of candidates as in the classical schools.

In the technical schools and institutes we meet again the *esterni* and *convittori*, terms that were explained in dealing with classical instruction. But the first are now relatively far more numerous than the second. In the schools the ratio is 26.025 to 2.911; in the institutes it is 5.397 to 2.91. Here, too, we find a class called *auditori*, persons who attend lectures but are not considered proper pupils. These hearers are not included in the above ratios.

In 1887 the technical schools¹ and institutes² were distributed by compartments as follows:

	Schools.	Institutes.		Schools.	Institutes.
Piedmont.....	43	9	Abruzzi.....	9	3
Liguria.....	26	4	Campania.....	46	5
Lombardy.....	48	10	Apulia.....	19	1
Venetia.....	32	5	Basilicata.....	4	1
Emilia.....	29	8	Calabria.....	6	1
Umbria.....	18	4	Sicily.....	46	6
Marches.....	23	5	Sardinia.....	3	2
Tuscany.....	88	8			
Rome.....	19	8	Total.....	409	70

¹In 1890-91 there were 329 public technical schools with 31,159 pupils, and 68 private technical schools with 1,969 pupils.

²The technical institutes numbered 68 public, with 7,568 pupils; private, 5, pupils, 232.

Every province had at least one technical school, while Naples reported 35. In the compartments and provinces where but one secondary technical institution of a kind is found, it is invariably a Government institution.

Naturally, secondary scientific instruction has grown more rapidly in recent years than secondary classical instruction. In 1863 there were 42 technical schools, with 2,200 students; in 1879 the corresponding numbers were 63 and 7,070. None but Government schools are reported for this period. In 1863 there were 32 institutes, with 1,789 students; in 1879 the numbers were 68 and 7,613. Since the last-named year we have full reports. The more important facts are summarized in the following table:

Year.	Technical schools.		Technical institutes.	
	Number.	Students.	Number.	Students.
1880.....	314	20,711	66	7,358
1883.....	423	24,884	67	7,585
1886.....	425	26,624	66	7,012
1888.....	409	28,936	64	5,919

The Government schools have continued to grow. In 1880 there were 63, with 6,990 pupils; in 1888, 143, with 14,652 pupils. All the other schools have fallen off in numbers, or in pupils, or in both. More and more this important department of education is passing into the hands of the national Government. The church influence is here extremely small.

THE UNIVERSITIES.

It was on Italian soil that the first modern institutions of learning to bear the name of university appeared. Definite dates it is impossible to give. Nor, when we consider all the facts and circumstances attending their origin, could we expect to find it otherwise. The order of evolution was something like this: One or more teachers, alone or supported by a patron or patrons, attracted a group of scholars; other teachers came to the assistance of the first ones, followed by more scholars; rules were formulated to govern instructors and students in their scholastic relations; private individuals and Government lent their encouragement; the school, which at first depended wholly or mainly upon the teachers, acquired an independent momentum, status, and character; and, finally, the conferring of a charter by the Pope, or some other authority, gave it a distinct institutional organization and life. At a later day this order was often reversed; many of the universities took their rise from a formal act of institution or foundation, but the early ones grew up and were not founded. Sometimes the University of Salerno, that came to an end in 1817, is said to have originated in 1150. The medical school that became the University of Salerno considerably antedated that time. The year 1200 is often

assigned to Bologna. That famous seat of learning celebrated what she regards as her eighth centennial in 1888. Such dates as these are more or less arbitrary, standing, perhaps, for some formal act, as the conferring of a charter, or for sudden internal growth or expansion. There were numerous schools in mediæval Italy that may be called candidates for university honors. Some perished, some that lived never reached that dignity, but of those that did reach it Salerno and Bologna were the first.

Originally these institutions were rather special schools than schools of general learning. Salerno, which received a strong impulse from Arabian science, was long the most celebrated school of medicine in the world. Bologna, under Isnerius and the Glossatores, was equally famous for law.¹ The expansion of special schools into schools of general learning was due to one of the most important facts in the intellectual history of the modern world.

It was in Italy that the Renaissance was born and also attained its fullest growth. There, in the times of Petrarch and Dante, men began to read once more the great masterpieces of Latin antiquity and to be molded by them. There, on the fall of Constantinople into the hands of the Turks in 1453, came the Greek scholars who fled to the West, greatly stimulating, if they did not actually introduce, the study of the Greek classics. While the Renaissance came after the universities, it still affected them profoundly in three respects: (1) It gave them a powerful stimulus; (2) it widened their field of teaching and made them in fact universities; (3) it determined, almost to our own times, the subject-matter of the first of their faculties, and, indeed, of all liberal education. The specializing tendency by no means disappeared. Salerno continued famous for medicine, Bologna for law, and Paris for theology, while also cultivating the whole circle of knowledge. The university organization made specialization easy; nothing more was necessary than to emphasize some one of the four faculties, viz, philosophy, jurisprudence, theology, or medicine. But the characteristic

¹ Baedeker, speaking from the local standpoint, thus summarizes the history of Bologna: "The university, said to have been originally founded in the fifth century, acquired a European reputation as a school of jurisprudence under Isnerius, who introduced the study of Roman law about 1088, and his successors, the Glossatores. Students streamed to it not only from all parts of Italy, but also from the countries of the North. In the twelfth and thirteenth centuries their number was generally 3,000 to 5,000, and in 1262 it is said to have increased to nearly 10,000. The study of medicine and philosophy was introduced at a later period and a theological faculty established by Pope Innocent VI. The anatomy of the human frame was first taught here in the fourteenth century, and galvanism was discovered here by Joseph Galvani in 1789. It is a remarkable fact that the university of Bologna has numbered members of the fair sex among its professors. Thus in the fourteenth century Novella d'Andrea, a lady of great personal attractions, who is said to have been concealed by a curtain during her lectures; and at a subsequent period Laura Bassi (mathematics and physical science), Mme. Manzolina (anatomy), and more recently (1794-1817) Clotilda Tambroni (Greek).

work of the universities, as a whole, was liberal teaching; they were the homes of humanity. These three things Italy may therefore fairly claim as her own—the university, the Renaissance, and that union of the two which has so largely shaped modern education, and, more broadly, modern intellectual life.

It is not at all necessary to go into the organization and management of the Italian universities under the old régime; to do so would be out of place. It suffices to say that they had their several charters and statutes, their governing and teaching bodies, their endowments and revenues, and that they experienced the vicissitudes incident to such institutions down to the final disappearance of the old political order of things and the unification of the Peninsula. Soon after that end was consummated in 1870 the State “took over the universities,” as it is called—that is, appropriated their property and assumed their management, or, in other words, the State nationalized the universities, making them the crown and summit of the system of public instruction that was now created for the Kingdom of Italy. The following table will introduce us at once to their present organization, condition, and work:

The royal universities.

Name.	Year found-ed.	Profes-sors and instruct-ors.	Students.				Degrees con-ferred.	Diplomas con-ferred.
			Jurispru-dence.	Mathe-matics and science.	Letters and philoso-phy.	Medicine and surgery.		
Bologna.....	1200(?)	102	313	139	35	758	1,245	69
Cagliari.....	1626	37	68	7	.....	61	136	9
Catania.....	1434	65	211	17	3	223	454	37
Genoa.....	1243(?)	66	240	73	31	466	810	44
Macerata.....	1290	14	91	.....	.....	.....	91	4
Messina.....	1549	62	82	20	1	100	203	14
Modena.....	1678	70	64	24	231	319	27	8
Naples.....	1224	284	1,639	294	123	2,018	4,074	185
Padua.....	1222(?)	115	209	289	124	515	1,137	96
Palermo.....	1805	87	421	145	35	524	1,125	70
Parma.....	1512	58	48	21	.....	169	238	18
Pavia.....	1300	72	204	162	25	596	985	113
Pisa.....	1338	69	153	161	36	246	596	15
Rome.....	1303	117	549	148	93	507	1,297	44
Sassari.....	1677	28	37	.....	.....	82	119	4
Siena.....	(a)	32	48	.....	.....	121	169	13
Turin.....	1404	137	708	289	120	1,078	2,195	94
Total.....	.....	1,415	5,085	1,789	624	7,895	15,193	837

a Thirteenth century.

There were also registered 310 auditors.

Besides the Government universities, there are 4 free universities—Camerino, founded in 1727; Ferrara, 1391; Perugia, 1276; and Urbino, 1564. These institutions had a total of 83 instructors of all grades and 371 students—96 in jurisprudence, 16 in science, and 259 in medicine. Together they conferred 16 degrees and 60 diplomas. The free universities are supported by municipalities or by their own funds, and as they do not contain philosophical faculties, they are universities only in name.

Mention should also be made of the university courses annexed to 3 of the lyceums, founded in 1812-1817. These courses represent 21 instructors and 70 students—15 in jurisprudence and 55 in medicine—and 25 diplomas.

Of the 1,415 instructors in the 17 universities 509 were ordinary professors, 216 extraordinary professors, 155 were commissioned and supplied, 6 were teaching without any university grade, and 529 by private assignment as free docents.

The ordinary professors are appointed by the King without limit of time; the extraordinary by the minister only for the course. Appointments are made with reference to scholastic and professional standing; or the superior council may appoint a commission to conduct a competitive examination of candidates; or, again, the question as between competitors may be decided upon printed theses.

The regular professor's salary is 5,000 lire; but 10 per cent of this sum is added to it at the close of each period of six years of service.

Formerly studies were distributed according to the traditional university method, but modern conditions and needs have wrought some important changes. The theological faculties, which were recognized by the Casati law, have been dispensed with, leaving theological instruction to other agencies than the State. In the meantime instruction has been materially strengthened on the modern side. Commonly we find four faculties—jurisprudence, mathematics and natural and physical science, letters and philosophy, and medicine and surgery. Sometimes, however, mathematics and science are separate faculties. Faculties are divided into groups, but not according to any uniform method.

At the head of each university is a rector appointed by the King. He is assisted by an academical council, composed of the presidents of faculties and the heads of some principal schools or groups. The council of Naples consists of 12 men, including the rector; of Bologna, 11. The central educational authority at Rome marks out the broad lines to be followed, but the usual university freedom is allowed to faculties and professors.

The regular courses in the several faculties are four years, with the exception of medicine and surgery, where it is six years. In the schools of pharmacy it is four or five years, according as a diploma only or a degree is sought. The university year is nine and one-half months in length, beginning some time in November. It opens with a formal inauguration, the principal feature of which is an address delivered by a member of one of the faculties.

The specializing tendency, or perhaps it would be better to say the emphasizing tendency, is quite pronounced. The University of Naples, for example, which is the largest of all the universities, emphasizes science and medicine. The *stato del personale* of Naples for the scholastic year 1890-91 was as follows:

The rector, the academic council, 12 in number, and the secretary's office, 9 in number.

The faculty of jurisprudence, 24 professors and 63 teachers.

The faculty of medicine and surgery, 37 professors and 64 free teachers; the first medical clinic, 7; the second medical clinic, 3; special medical clinic for demonstrative and propædæutic pathology, 4; surgical clinic, 7; clinic of traumatology, 2; clinic of ophthalmology, 5; clinic of obstetrics, 7; clinic of skin diseases and syphilis, 5; clinica psichiatrica, 5; cabinet of experimental physiology, 6; cabinet of legal medicine, 3; cabinet of general pathology, 3; cabinet of hygiene, 4; cabinet of *materia medica*, 6; cabinet of human anatomy, 7; cabinet of pathological anatomy, 5; cabinet of neuro-pathology, 1; cabinet of propædæutics and special pathology, 3; school of pharmacy, 7; free teachers, 2; cabinet of pharmaceutical chemistry, 3.

The faculty of mathematics and science, physical and natural, mathematical section, 14 professors; scientific section, 14 professors; free teachers of mathematical section, 18; free teachers of scientific section, 18; museum of mineralogy, 9; cabinet of geology, 3; botanical garden, 16; cabinet of physics, 5; cabinet of physiology and general histology, 4; meteorological observatory of Vesuvius and cabinet of terrestrial physics, 8; cabinet of geodesy, 2; cabinet of general chemistry and school of practice annexed to the cabinet, 7; cabinet of comparative anatomy, 5; cabinet of anthropology, 3; school of mathematics and drawing, 5; *scuola di magistero in scienze*, a director.

The faculty of philosophy and letters: Professors, 20; honorary professors of the university, 7; free teachers, 21; *scuola di magistero in lettere*, 1 director; pedagogical museum, 2. In addition the library employed 23 persons.

Other institutions distribute their faculties according to their special needs, thus widening the whole field of university instruction. Thus, we find special schools, museums, cabinets, clinics, etc., for veterinary medicine, archaeology, gynecology, Mount Etna, procurators and notaries, applications of engineering, zoology, zootomy, anatomy of domestic vertebrate animals, zootechny, astronomical observatories, descriptive geometry, geography, mental diseases, partnerships, infinitesimal calculus, cryptogamic botany, numismatics, animal surgery, agriculture, economic administration, nose and larynx diseases.

To many minds the most interesting statistics contained in the above table will be those showing the number of students in the different faculties. They will bear repetition:

Jurisprudence	5, 085
Science and mathematics.....	1, 789
Letters and philosophy.....	624
Medicine and surgery	7, 695
Total.....	15, 193

No facts could show more demonstrably than these the direction in which the educational tide is setting in Italy. Not only was Italy the native home of the Renaissance, but no country has held more loyally to the classical tradition. As already remarked, until within a brief period, secondary instruction consisted mainly of the humanities; and yet, in the year 1887-88, but 624 students out of 15,193 found in the national universities were pursuing letters and philosophy.

In these statistics we recognize the play of familiar forces. The only career to which the third faculty directly leads is teaching. The gymnasium and lyceum professors must have studied in this faculty. But the old chairs are full; new schools appear but infrequently; so that, practically, the only openings for new men are made by the death, resignation, or retirement of old ones. In 1887-88 the whole number of these teachers was 5,133. Apparently the attendance upon the philosophical faculties is quite sufficient to recruit the depleted ranks.

The same year the 579 technical schools and institutes were taught by 4,277 professors. If we add the 1,360 teachers in the agricultural schools and the industrial and commercial schools, a very large number of whom, at least, must have received a scientific training, we have a total of 5,637. There still remain the professors of the universities and of the superior scientific institutions. Everything considered, it is fair to conclude that the present demands for teachers in the two kinds of schools are about equal. It is hard to say whether the two have yet reached a state of equilibrium, but the future appears to belong rather to the modern school.

But teaching is by no means the only career to which scientific instruction leads, as witness the numerous openings to scientific men in civil, industrial, and commercial life. Considering these openings, it is not surprising that the disparity between the two numbers should be so great.

An interesting comparison lies between the students in the secondary classical and the secondary scientific schools. They were, respectively, 63,860 and 35,775 in number. The lyceum examined 5,259 and licensed 3,210 students. The technical schools examined 4,450 and licensed 3,248. Why should the ratio of classical students to scientific students be 63 to 35 in the secondary schools, while it is only 6 to 12 in the universities? The answer is that university students in jurisprudence and medicine proper, as well as those in letters and philosophy, must receive a classical preparation; in other words, all students but those in science and mathematics. Were it not for this rule the classics would no doubt lose more ground in Italy than they have already lost.

To be admitted as a student to any faculty, the candidate must have received a certificate of graduation from a secondary school leading up to it. He registers at the beginning of the year for the course that he intends to pursue, but he enjoys large liberty after registration. The maximum limit of study is thirty hours a week, and the minimum eighteen hours; in medicine the maximum is thirty-six hours. The royal universities are open to women on the same terms as to men, but the statistics of superior instruction do not show to what extent women avail themselves of their opportunities.

It will be seen that diplomas and degrees are both named in the table. The doctor's degree is given on compliance with all the conditions relat-

ing to the prescribed regular courses; a diploma, for certain special courses. This is the distribution of the degrees:

Jurisprudence	954
Letters alone	112
Philosophy alone	13
	<hr/>
Mathematics	24
Physics	8
Chemistry	10
Natural science	31
Agriculture	13
	<hr/>
Medicine and surgery	779
Veterinary surgery	28
Pharmacy	9
	<hr/>
	816
 Total	 1,981

The students examined for degrees were 2,006 in number. Of the 837 diplomas conferred, 674 were given in the faculty of medicine and surgery.

Still more light is thrown on the question of studies by the distribution of the professors and other instructors. The list includes the free as well as the royal universities:

Jurisprudence	419
Letters and philosophy	197
Mathematics and science	323
Medicine and surgery	566
	<hr/>
Total	1,498

It has been stated that the Government appropriated the property of the 17 universities and assumed the sole responsibility of their management. While in general the incomes from the productive funds formerly belonging to a university is a measure of the appropriations now made to it, it is by no means closely followed. A much larger sum is expended each year for higher education than the aggregate such funds produced. The ordinary expenses of the 17 universities for the scholastic year 1888-89 were 7,963,837 lira; the extraordinary, 751,747; total, 8,715,584 lire, or \$1,743,117, counting the lire at 20 cents. If the money were equally divided, which of course is not the case, the universities would enjoy an average income of about \$100,000.

The statistics for a term of years show a healthy growth of interest in higher education. The students and auditors attending the universities, royal and free, and the university courses annexed to lyceums stand thus for the four periods named:

1866-67	10,381
1871-72	11,997
1881-82	11,442
1888-89	16,578

Number of students and auditors enrolled in the universities of the Kingdom at different periods.

	1856.	1862.	1872.	1882.	1888.	1891-92. <i>a</i>
<i>Royal universities.</i>						
Bologna	496	471	590	761	1,263	1,318
Catania	476	440	197	287	459	662
Genoa	540	224	440	662	818	963
Messina	118	120	107	158	209	353
Modena	468	510	352	209	321	346
Naples			4,506	3,414	4,104	4,721
Padua	1,132	930	1,072	915	1,168	1,269
Palermo	735	481	231	615	1,153	1,299
Parma	175	345	282	217	238	313
Pavia	1,185	1,380	755	801	1,063	1,123
Pisa	288	622	569	604	623	742
Rome	806	593	793	932	1,319	1,408
Sienna	352	181	108	193	170	218
Turin	1,813	902	1,401	1,809	2,233	2,063
Cagliari	262	110	93	144	137	174
Macerata	166	59	111	107	105	160
Sassari	144	49	87	91	120	125
<i>Free universities.</i>						
Camerino	45	51	38	95	97	101
Ferrara	68	134	100	51	49	79
Perugia	126	88	81	79	130	198
Urbino	55	38	84	77	95	67
Total	9,449	7,774	11,997	12,191	15,874	17,792

a These later statistics are added to the table for the convenience of the reader. They are taken from the report entitled, "Istruzione secondaria e superiore, anno scolastico 1891-92," p. 189.

Number of students enrolled in the different faculties of the universities of the Kingdom at different periods.

Year.	Jurisprudence.	Medicine and surgery.	Mathematics and science.	Letters and philosophy.	Theology.	Different courses.	Total.
1867	3,756	2,908	2,125	166	35	1,391	10,381
1874	4,085	3,075	2,133	202	.....	1,987	11,482
1881	4,454	5,104	1,476	352	.....	.....	11,386
1888	5,330	8,018	1,865	661	.....	.....	15,874

The registration of students in the several faculties, by years, shows a remarkable uniformity and persistency in attendance.

	I.	II.	III.	IV.	V.	VI.
Jurisprudence	1,039	1,190	1,243	1,301	.....	.....
Letters and philosophy	149	155	142	178	.....	.....
Mathematics and science	620	631	150	123	.....	.....
Medicine and surgery	839	907	925	891	897	893

In the schools of pharmacy and some other special schools, however the members are very fluctuating.

THE SUPERIOR INSTITUTES.

The institutions that bear this name, 11 in number, stand to the technical schools and institutes in a relation similar to that in which the universities stand to the gymnasium and lyceum. They are of late origin and sprang, of course, from the recent growth of interest in scientific knowledge. Their names, together with the dates of their foundation, form an interesting chapter of educational history:

- Bologna: School of Application for Engineers, 1887.
- Florence: Institute of Superior Studies and of Perfecting, 1859.
- Milan: Academy of Sciences and Letters, 1859.
- Milan: Superior Technical Institute, 1859.
- Milan: Superior School of Veterinary Medicine, 1859.
- Naples: School of Application for Engineers, 1810. Reorganized in 1863.
- Naples: Superior School of Veterinary Medicine, 1856.
- Pisa: Superior Normal School, 1846.
- Rome: School of Application for Engineers, 1873.
- Turin: School of Application for Engineers, 1859.
- Turin: Superior School of Veterinary Medicine, 1796. Reorganized in 1860.

The names of these institutes directly suggest their character. They are all Government institutions. The central authority lays down general rules for their regulation, but the professors enjoy much the same liberty as the university professors. Together they had in 1887-88 235 professors and instructors and 1,959 students and auditors. The students were distributed among the three faculties, as follows:

Mathematics and science	1, 184
Letters and philosophy	176
Medicine	599

One hundred and thirty-eight degrees and 347 diplomas were awarded on examination. The growth of the superior institutes is shown by the following table:

Students and auditors.

1861	262
1871	1, 148
1881	1, 235
1885	1, 715
1888	1, 959

Results of final examination in the universities, the university courses, and the superior institutes, 1887-88.

Examinations.	Royal uni- versities.		Free uni- versities.		University courses annexed to lyceums.		Superior institutes.		Total.	
	Candidates.	Approved.	Candidates.	Approved.	Candidates.	Approved.	Candidates.	Approved.	Candidates.	Approved.
Jurisprudence:										
Degrees.....	971	954	18	18					989	970
Diplomas—										
Attorney.....		74								74
Notary.....		51		5		9				68
Letters and philosophy:										
Certificates of license.....		41					4			45
Degrees.....	127	125					13	12	140	137
Mathematics and science:										
Certificates of license—										
Mathematics, physics, and natural science.....		368		11			1			380
Agriculture.....										
Degrees—										
Mathematics, physics, and natural science.....	73	73					4	4	77	77
Agriculture.....	15	13							15	13
Diplomas—										
Civil engineering.....	63	63					254	254	317	317
Industrial engineering.....							53	53	53	53
Architecture.....							2	2	2	2
Medicine and surgery:										
Degrees—										
Medicine and surgery.....	781	779					67	67	848	846
Veterinaria.....	28	28					55	55	83	83
Chemistry and pharmacy.....	11	9							11	9
Diplomas—										
Pharmacy.....	274	260	17	17	9	9	5	5	305	291
Midwifery.....	256	229	17	17	6	6	22	22	301	274
Phlebotomy.....	66	66	21	21	1	1			88	88
Total:										
Degrees.....	2,006	1,981	18	18			139	138	2,163	2,135
Licenses.....		409		11				5		425
Diplomas.....	659	746	55	60	16	25	336	336	1,066	1,167

THE SUPERIOR SPECIAL SCHOOLS.

These schools are also 11 in number, and their names, with the dates of their foundation, are matters of interest:

Bari: Superior School of Commerce, 1886.

Florence: School of Social Science, 1875.

Florence: Superior Institute of Work for Women,¹ 1882.

Genoa: Superior School of Commerce, 1884.

Genoa: Superior Naval School, 1870.

Milan: Superior School of Agriculture, 1870.

Portici: Superior School of Agriculture, 1872.

Rome: Superior Institute of Work for Women,¹ 1882.

Turin: Museum of Italian Industry, 1862.

Vallombroso: Institute of Forestry, 1869.

Venice: Superior School of Commerce, 1868.

In 1887-88 these schools had a total of 147 professors and instructors and 789 students and auditors. These students were distributed in courses as follows: Preparatory and common, 145; literature, history,

¹These are normal schools of a high grade (vide report of the Commissioner of Education for 1890-91, Vol. I, p. 328).

geography, pedagogy, and mathematics, 179; agriculture and forestry, 161; industrial chemistry, 15; industrial mechanics, 61; engineering, etc., 9; ornamentation, 21; various courses, 27. One hundred and seven students received diplomas.

The growth of the superior special schools has not been very vigorous. In 1872 there were enrolled in them 509 students; in 1882, 397; in 1888, 789. The Museum of Italian Industry at Milan, which was long the foremost school of this class, reported but 81 students in 1888.

MISCELLANEOUS SCHOOLS.

The Italian system of public instruction has now been traced out in its main features. There remain, however, several groups of schools supplementary to the institutions of elementary, secondary, and superior instruction that may be brought together under the general head of miscellaneous.

Institutes of mercantile marine.

Kind of school.	Number.	Professors.	Students.
Government	18	151	720
Paragiate	2	16	48
Private	1	4	5
Total	21	171	773

The instruction given in these institutes relates to marine construction and mechanism, and to fitting commanders of vessels for their duties.

Special schools and practical schools of agriculture.—Of the 8 special schools of agriculture 5 are devoted to vine culture, 1 to olive culture and oil making, 1 to pomology and horticulture, and 1 to zootechny and cheese making. In 1889-90 these schools had 47 instructors and assistants, 232 students, and they issued 62 licenses.

The practical schools of agriculture were 21 in number, with 63 teachers and assistants and 566 students. They issued 109 licenses.

In all there were 29 agricultural schools, with 160 teachers and 798 students. The oldest of these schools was founded at Treviso in 1876, the last at Bergamo in 1887.

Schools of mines.—These are 4 in number, 1 founded in 1862, 1 in 1867, and 2 in 1871. Together they had 23 teachers and 53 pupils and issued 12 licenses.

Industrial and commercial schools, 1888-89.

Kind of school.	Number.	Teachers.	Pupils.	Licenses.
Superior schools of art applied to industry	5	40	1,058	49
Schools of arts and trades	53	452	7,063	291
Schools of art applied to industry	74	282	7,870	419
Special schools	21	175	1,985	150
Professional schools for women	15	301	5,135	526
Total	168	1,250	23,111	1,435

Schools belonging to this group are found in 54 of the 63 provinces.

Academies and institutes of fine arts.—The 14 schools and institutes of this description had 176 teachers, 376 pupils, and they issued 31 diplomas. The oldest of them, the Institute of Fine Arts at Florence, was founded in 1350, the Academy of Carrara in 1769, the Academy of Milan in 1776, the Institute of Modena in 1786, and the Institute of Parma in 1756; the others fall within the present century.

Musical institutes and conservatories.—The 6 institutions devoted to the cultivation of music contained 154 teachers and 826 pupils, and they issued 48 diplomas. The College of Music at Naples, the oldest of them, dates from 1806. Of the 826 pupils 511 were men and 315 women.

Annexed to the conservatories of Naples and Parma are normal schools of choral singing. The course of study is two years and embraces, besides the theory and practice of singing, elementary harmony and practice on the keys of an instrument, anatomy, physiology, and hygiene, and their applications to singing.

Military institutes and schools of marine.—In 1888 there were in Italy 12 military institutes, the 2 oldest of which, with one exception, those of Modena and Milan, were founded in 1859. The single exception is the Military Academy of Turin, which dates from 1669. Several of these schools emphasize particular features of the art of war, as the use of artillery and military sanitation; 1 is a normal school of infantry and another of cavalry. The 12 institutes and schools had 405 instructors and 3,039 pupils, and 1,201 pupils were promoted at the end of their courses of study.

The Naval Academy at Leghorn was founded in 1881; the School of Pupil Machinists at Venice in 1862. Together they had 75 instructors and 460 pupils.

GOVERNMENT LIBRARIES.

The 32 Government libraries in 1888 contained 1,019,498 books and manuscripts, the largest, the National Library at Naples, containing 125,296; 2 others contained more than 100,000 each. In the year named there were 766,153¹ readers, the largest number, 89,095, being at the National Library of Turin. The oldest of these libraries, which is also the smallest, dates from the end of the sixteenth century; 3 date from the seventeenth century; 7 from the eighteenth century; 2 fall within the present century. The dates of the others are not given.

TWENTY YEARS OF PUBLIC SCHOOLS IN ROME.

Previous to 1870 such a thing as a system of public schools was wholly unknown to the Romans, and the very idea and name were strange. The Pope ruled the city and provinces, and his civil and political agents were ecclesiastics. Education, which was absolutely in the

¹ In 1891 this number had increased to 943,903.

hands of the priests, was small in quantity and poor in quality. But on the incorporation of the papal territory into the Kingdom of Italy the system of public instruction that Italian statesmen and educators had been developing the ten preceding years was immediately introduced, and it has since been in operation, subject to such changes as naturally attend a new and imperfect system in a time of great educational activity. Although the difficulties to be overcome were great, the results attained the first year were anything but discouraging. They are summed up in the following table:

	Schools.	Classes.	Enrolled.	Attend- ance.	Exam- ined.	Pro- moted
Free city day schools for boys	14	44	2,564	2,304	1,614	663
Free city day schools for girls	8	29	1,188	1,049	702	433
Free city evening schools for boys	8	30	1,983	1,536	735	262
Free city holiday schools for girls	9	15	494	391	227	135
Suburban and rural day schools for boys ..	1	1	40	30	28	21
Suburban and rural evening schools for boys	1	1	24	21	18	4
Total	41	120	6,291	5,331	3,324	1,518

Such was the work done in the public schools of Rome in the scholastic year 1870-71. Since that first year great progress has been made along two lines of development: First, the variety of schools maintained or the range of the instruction provided has been greatly increased; secondly, the number of schools of all kinds and the number of classes and pupils have increased also in a much greater ratio. If the reader will compare the tables following, compiled for the scholastic year 1889-90, with the one given above, he will see the progress that has been made along the two lines of movement:

	Schools.	Classes.	Enrolled.	Attend- ance.	Exam- ined.	Pro- moted.
Free city day schools for boys	18	182	8,008	6,519	5,791	3,694
Free city day schools for girls	25	244	9,765	8,069	6,847	5,044
Free city evening schools for boys	9	43	1,179	794	595	332
Free city holiday schools for girls	11	51	871	658	434	371
Suburban and rural day schools for boys ..	22	25	695	496	311	251
Suburban and rural day schools for girls ..	13	15	407	308	205	164
Suburban and rural evening schools for boys	20	22	506	333	186	149
Suburban and rural holiday schools for girls	11	19	96	69	48	14
Pay elementary day schools for boys	1	7	222	189	189	155
Pay elementary day schools for girls	2	16	322	256	239	202
Pay kindergartens			941			96
Free kindergartens			958			
Preparatory schools for ornamental arts ..		1		358	228	
Free evening schools for artisans	3		165	152		
Primary courses in schools for artisans ..			263	179		
Superior female school, Fusinato Erminia Fera	1		66	64	49	35
Professional female school, Via della Mis- sione	1		698	693	501	461
Professional female school, Teresa Chigi Torlonia	1		150	157	132	119
Evening commercial school for boys	1	8	180	151	106	53
Holiday commercial school for girls	1		217	209	115	97
Commercial school for girls	1		74	67		
Total	142	624	26,149	19,519	15,698	11,117

The terms employed in this table have been explained on previous pages. The suburban and rural schools lie outside the city walls. Particular attention may be drawn to the greatly increased facilities for the education of girls. The last school on the list was established in 1888 or 1889. It takes the girl at the age of about 14, and carries her through a three years' course of practical studies, including two modern languages, with a view of fitting her for a clerk or an accountant in business life. The professional schools for girls are professional only in a domestic and industrial sense. They give instruction to girls and young ladies in literary and practical studies. In addition to reading, writing, composition, geography, arithmetic, literature, drawing, and French, dressmaking, shirt making, washing, ironing, cookery, the making of artificial flowers, embroidery of several kinds, knitting, and other domestic and artistic studies are taught. The studies are arranged in courses, and a certain liberty of choice is given to pupils. They are most interesting schools, full of promise for the future of a large number of Roman women.

The record of the Roman schools is so interesting as to justify the introduction of another table, showing the number of schools, classes, pupils, etc., year by year:

Scholastic year.	Schools.	Classes.	Enrolled.	Attend- ance.	Exam- ined.	Pro- moted.
1870-71.....	41	120	6,291	5,331	3,324	1,518
1871-72.....	55	220	6,394	5,420		
1872-73.....	75	274	11,843	8,057	6,224	4,692
1873-74.....	95	280	14,290	10,698	7,540	5,286
1874-75.....	79	364	14,875	10,588	7,964	5,696
1875-76.....	90	437	17,376	11,777	8,005	5,788
1876-77.....	113	506	18,418	13,188	10,301	7,329
1877-78.....	124	574	19,805	14,908	11,411	8,557
1878-79.....	153	661	21,842	16,133	12,177	9,139
1879-80.....	147	663	20,475	15,811	12,443	9,375
1880-81.....	155	616	21,311	15,909	12,490	9,590
1881-82.....	148	599	21,827	16,206	12,891	10,160
1882-83.....	133	573	22,663	17,042	11,623	10,764
1883-84.....	131	615	22,685	17,552	15,089	11,940
1884-85.....	141	680	23,959	19,081	16,632	13,030
1885-86.....	144	696	24,876	19,245	15,767	12,906
1886-87.....	147	641	23,011	17,177	13,474	10,116
1887-88.....	143	640	24,084	18,351	14,042	10,039
1888-89.....	149	560	24,281	18,433	14,652	10,023
1889-90.....	142	624	26,149	19,951	15,698	11,171

From every point of view this is an instructive and encouraging table. The figures are just such as inspire confidence in an educational statistician, revealing, as they do, continuous normal growth. If some of the columns halt and even fall back a little toward the end we find a ready explanation in the severe financial embarrassments of the Roman and National Governments the last few years. It will be seen that the number of classes has increased more than fivefold, and the number of pupils fourfold. For a New England or Western city of 400,000 people 624 classes and 26,149 pupils in elementary schools may not be a large showing, but for Rome it is a most gratifying one.

The cost of a system of schools at different terms is still another gauge of its growth. The cost of the Roman system at intervals of five years is as follows:

	Liro.
1871	579, 375
1876	1, 064, 097
1881	1, 434, 662
1886	1, 891, 377
1889 (the last year for which the cost is given)	2, 760, 816

Most of the public schools of Rome are found in buildings erected for other than school purposes. Many of these buildings are old and inconvenient. The same is true throughout the Kingdom to a greater or less degree. The reason is twofold: The confiscation of church property, such as convents and monasteries, swept into the possession of the State a multitude of buildings, the Kingdom over, that could be used for school purposes, while the insufficiency of revenue has prevented the erection of a suitable number of better structures. But many new buildings have been erected. Rome prides itself on its new school-houses. The school Queen Margherita, beyond the Tiber, for example, is an admirable schoolhouse, thoroughly modern in all its appointments. It is well constructed, ventilated, warmed, and lighted, and the halls and cloakrooms are well arranged. The steps of the principal flights of stairs are of marble; the rooms are well furnished with maps and other illustrative appliances; there are gymnasiums for boys and girls, also wash rooms, and a bathroom for boys with a half dozen douche baths; the carpenter shop is well furnished with tools, models, and materials; a pretty garden is found in the rear of the building, and a picture of King Humbert hangs in every room. The building accommodates about 1,500 pupils and 30 or more teachers. The classes are of moderate size. The girls' classes are taught by women, and some of the boys' classes also. A director presides over the boys' department, and a directress over the girls' department. Provision is made for industrial training in both departments. The order and discipline are excellent, and much attention is paid to instruction in patriotism, decorum, and politeness. The severest criticism that can be made on the building is that economy of space and money was not sufficiently consulted in its construction. The distribution of the pupils in this school is shown in the following table:

Analysis of the pupils in the school Regina Margherita.

Class.	Boys.	Girls.	Total.	Class.	Boys.	Girls.	Total.
Asilo	81	58	149	IV.....	89	39	128
I.....	269	171	440	V.....	54	19	73
II.....	220	91	311				
III.....	102	59	161	Total	815	437	1, 252

American and English residents in Rome say the public schools are good, and the limited observation of the writer confirms their judgment. The teachers give evidence of cultivation and of devotion to their duties. Their work is full of promise for the youth of the city.

FINANCE—TEACHERS' PENSIONS.

The cost of public education in Italy is divided between the State, the provinces, and the communes, the State and the communes bearing the principal burden. The rule is that the communes shall support the elementary schools, but the State frequently assists by granting subsidies, especially to the poorer communes. The law provides that the communes shall support the gymnasiums and the technical schools, but in many cases the State bears a great part of the cost. In normal schools and lyceums the State pays the professors' salaries and for scientific material. The local authorities defray the remainder of the expense. The State also undertakes to pay one-half the salaries of the professors in the technical institutes. In some cases provinces defray the cost of scientific material used in the universities, but the burden of their support falls directly upon the State, which has assumed the management of the university property, as explained more fully in another place. The higher special schools are supported by the joint contributions of the State, the provinces, and the communes, with occasional assistance from local chambers of commerce.

To be more definite, the contributions from the State comprehend subsidies for primary instruction, for the construction and repair of schoolhouses, for the expense of teachers' salaries, for the pension fund of elementary teachers, and for the orphans of certain teachers. The contributions of the provinces embrace subsidies to the communes for elementary instruction and for teachers' salaries. The contributions of the communes include salaries of teachers and janitors of elementary schools, the cost of obligatory gymnastics, the supply and maintenance of school buildings, subsidies for the teachers' pension fund, rent of school buildings, apparatus and furniture, the cost of the *asili*, the evening and the holiday schools, prizes, books and maps for poor children, and the expense of school festivals. The following table shows the amount of the contributions made by the State, the provinces, and the communes for elementary instruction, obligatory and optional, ordinary and extraordinary, at the different dates given:

Year.	State.	Provinces.	Communes.	Total.
	<i>Lire.</i>	<i>Lire.</i>	<i>Lire.</i>	<i>Lire.</i>
1873.....	1,932,000	548,000	26,559,000	29,039,000
1876.....	1,498,000	402,000	30,069,000	31,969,000
1882.....	2,699,000	486,000	40,410,000	43,594,000
1887.....	3,671,000	285,000	50,723,000	54,679,000
1889.....	6,110,000	284,000	55,378,000	61,769,000

For the scholastic year 1888-89 the cost of the public normal schools was 2,445,000 lire, of which the State furnished 1,813,000 and the provinces 632,000 lire.

The same year secondary classical and technical education cost 22,306,000 lire. This sum was contributed as follows:

	Lire.
The State.....	12,740,000
The provinces.....	2,317,000
The communes.....	7,247,000

The cost of the 17 national universities for the year 1888-89 are thus analyzed:

Ordinary:

	Lire.
Personal.....	6,317,000
Material.....	1,646,000
Total.....	7,963,000
Extraordinary.....	751,000
Total.....	8,714,000

Collecting the various items thus enumerated, we have the following exhibit:

Cost for the scholastic year 1888-89:	Lire.
Elementary schools.....	61,796,000
Normal schools.....	2,445,000
Secondary schools.....	22,306,000
Universities.....	8,715,000
Total.....	95,262,000

It will be seen that this statement does not include all the items of expenditure for public instruction. It does not embrace, for example, the cost of the central administration. Nor are the materials for an exhaustive statement at hand. It will answer the present purpose to say that the total is about 100,000,000 lire, or \$20,000,000. This would be a small sum to expend for the education of 30,000,000 of people in the United States, but it is a large sum for Italy.

Instruction in the public elementary schools is free. In the secondary schools taxes range from 5 lire for an admission examination, 10 lire for annual registration, and 5 lire for a license examination, in gymnasiums and technical schools, to 45, 60, and 75 lire for the same purposes in lyceums. The fees charged by the universities for matriculation, registration, examination, and diploma differ in different faculties and special courses. In jurisprudence, medicine and surgery, mathematics and its applications to engineering, they amount to 860 lire; in physical and natural science and mathematics, chemistry and pharmacy, and philosophy and letters, to 450 lire; in the courses for notaries and procurators, to 200 lire; in veterinary medicine and agriculture, to 168 lire; in obstetrics, to 89 lire, and phlebotomy to 57 lire.

¹ Signor Bodio, director of the royal statistical bureau of Italy, states that the total annual expenditures for education by the Government and local authorities may be reckoned as amounting to 122,948,809 lire, or \$23,729,200. (Report of the Commissioner of Education, 1890-91.)

Teachers' pensions.—Formerly teachers did not share in the provision that the laws made for pensioning public servants, owing to the fact that they were regarded as employees of the communes or municipalities and not of the State. This omission being generally thought an injustice, Parliament in the year 1878 created a special system for the benefit of teachers of asili and elementary schools. This system, known as monte della pensione, is supported with funds derived from the following sources: (1) Gifts and legacies by private persons; (2) contributions by the State and provinces; (3) yearly contributions by the towns or municipalities; (4) percentages of teachers' salaries that are held in reserve.

Teachers who have served twenty-five years are entitled to the benefits of the fund, the amounts that they receive varying with their ages. Monte della pensione is a young institution, and as yet there are no results of value to be reported. All professors of gymnasiums, lyceums, universities, and other Government schools are entitled to receive pensions according to their years of service and their respective ages.

THE WARFARE UPON IGNORANCE.

In stating the pressing need of a mental and moral regeneration of the Italian Nation at the founding of the Kingdom, statistics were presented that show the appalling illiteracy of the people at that time. In tracing out the development of the system of public instruction that may be said to have originated with the Casati law of 1859, numerous occasions have arisen to speak of the educational progress since made in various directions. At the close of this review it is necessary to sum up the results of the whole effort that has been put forth to raise the standard of national education. As before we must resort to the statistics of illiteracy.

Proportion of the illiterate, per 100 inhabitants, at different periods.

Year.	Above 6 years of age.		Above 20 years of age.		Without distinction of age or sex.
	Men.	Women.	Men.	Women.	
1861	68.09	81.27	65.47	81.52	78.06
1871	61.86	75.73	60.17	77.18	72.96
1881	54.56	69.32	53.80	72.93	67.26

Unfortunately, no census has been taken since 1881, but there is an abundance of proof that had the census been taken in 1891, as it would have been but for the financial embarrassments of the Kingdom, the former rate of diminution would have been shown. Witness the two following tables:

Proportion to the 100 persons contracting marriage of those unable to sign the marriage registers at different periods.

Year.	Men.	Women.	Total.	Year.	Men.	Women.	Total.
1866.....	59.96	78.97	69.47	1881.....	48.24	69.90	59.07
1871.....	57.73	76.73	67.23	1885.....	44.28	65.56	54.92
1876.....	52.35	72.95	62.65	1889.....	41.21	60.45	50.83

Proportion of illiterate conscripts to the 100 drawn for the army and the navy at different periods.

Year.	Army.	Navy.
1866.....	64.01	.....
1871.....	56.74	68.52
1887.....	44.98	51.72
1889.....	42.04	44.24

That is, the percentage of persons contracting marriage unable to write fell from 69.47 per cent in 1866 to 50.83 per cent in 1889, and the number of illiterate military conscripts from 64.01 per cent in 1866 to 42.04 per cent in 1889.

Naturally the several regions of the Kingdom practically maintain their relative positions, as shown by the following exhibit:

Proportion of illiterates in the compartments for the year 1889.

Compartments.	Per 100 contracting marriage.		Per 100 con- scripts.	Compartments.	Per 100 contracting marriage.		Per 100 con- scripts.
	Men.	Women.			Men.	Women.	
Piedmont.....	10.33	17.89	18.57	Abruzzi.....	54.42	84.54	60.75
Liguria.....	19.25	30.22	24.88	Campania.....	56.88	78.13	56.03
Lombardy.....	19.00	27.19	23.51	Apulia.....	66.13	84.80	65.82
Venetia.....	27.57	54.45	27.78	Basilicata.....	72.12	88.56	61.14
Emilia.....	41.28	60.11	41.78	Calabria.....	72.26	90.64	63.19
Tuscany.....	34.41	62.31	39.61	Sicily.....	61.06	80.05	61.80
Marches.....	50.21	76.65	52.02	Sardinia.....	58.34	82.84	66.59
Umbria.....	49.49	76.58	55.28	The Kingdom.....	41.21	60.45	42.04
Rome.....	31.27	54.33	49.28				

That is, in Calabria, for example, only 1,374 men in every 10,000, and only 936 in every 10,000 entering into the marriage relation in 1889, could write their names. Still, this table, compared with the corresponding one on an earlier page, shows commendable progress.

Dividing the Kingdom into four divisions, the per cents of illiterate persons in 1881 were as follows:

Upper Italy.....	40.85
Middle Italy.....	64.61
Southern Italy.....	79.46
The islands.....	80.91

The smallest percentage was in Piedmont, 32.27 per cent; the largest in Basilicata, 85.18 per cent.

The following table shows the number of pupils in elementary schools per 100 inhabitants for the dates given. Venetia and Rome are not included under the first date, or Rome under the second. These omissions, however, do not affect the value of the ratios:

1862	4.63
1868	5.85
1872	6.43
1888	7.51

Number of pupils in schools of various kinds at different periods.

Year.	Elementary.	Normal.	Secondary.		University and university courses.	Superior institutes and schools.
			Classical.	Technical.		
1862.....	1,008,674	3,742	10,226	3,431	.....	.....
1868.....	1,484,532	.....	12,748	10,192	10,381	682
1872.....	1,722,947	6,130	12,042	11,038	11,097	1,181
1888.....	2,307,982	11,694	63,880	35,775	15,944	2,748

Making full allowance for the increase of population, the attendance on elementary schools increased 90 per cent in twenty-four years.

An inquiry into the cost of public instruction for the whole period covered by this review would lead us to the same general conclusion. Unfortunately, the materials are not at hand for making as complete a showing as could be desired. The present view must be limited to the elementary schools since 1873.

Total cost of elementary instruction at different periods.

	Lire.
1873	29,039,000
1876	31,969,000
1882	43,594,000
1887	54,679,000
1889	61,796,000

Italy is still in a very backward condition compared with well-educated countries. The statistics brought together in the following table do not all relate to the same year, but they are the last at hand relating to the several subjects; moreover the dates are so near together, and the statistics are of such a nature, that the discrepancies in no way affect the value of the comparison:

Country.	Illiterates per 100 conscripts.	Pupils in school per 100 inhabitants.	Cost of elementary schools per 100 inhabitants.	Country.	Illiterates per 100 conscripts.	Pupils in school per 100 inhabitants.	Cost of elementary schools per 100 inhabitants.
			Lire.				Lire.
Italy	42.04	7.51	2.10	Belgium	13.05	14.57	4.48
France.....	9.05	14.49	6.00	Holland	7.26	14.28	6.04
German Empire .....	.51	.....	.....	Sweden .....	.19	.....	.....
Prussia.....	.78	17.83	6.03	Servia	79.30	.....	.....
Bavaria.....	.04	.....	.....	Denmark .....	.36	.....	.....
Württemberg.....	.01	.....	.....	Russia in Europe	68.67	.....	.....
Baden.....	.02	.....	.....	Russian Poland.....	82.19	.....	.....
Austria-Cisleithania.....	23.67	12.51	.....	England and Wales.....	.....	16.39	6.29
Hungary.....	36.00	.....	.....	Spain .....	.....	7.29	.....
Switzerland .....	.80	16.06	6.15				

This is not all; the average level of the educated class is low. The State provides but five years of elementary instruction, and only three of these are compulsory, while the best-educated States, like Saxony and Prussia, provide eight years, and all are compulsory.

Such facts as these, valuable as they are for the purposes of the comparative statistician and as a lesson for Italian statesmen and educators, do not answer the question that is most important in this inquiry. That question is not how Italy compares with other countries to-day, but how she compares with herself in former times. It is not a question of status, but of movement. Taking into account all the facts—the political, social, and economical condition of Italy in 1859, and particularly its educational condition; the establishment of the new Kingdom, and the embarrassing questions that it has been compelled to confront—it must be admitted on all hands that good progress, if not, indeed, extraordinary progress, has been made in the work of educating the nation. It may well be doubted whether in any other country the number of illiterate persons contracting marriage was ever reduced 18.64 per cent, or the number of illiterate men drawn for the army 22 per cent, in twenty-three years' time.

SUMMARY AND CONCLUSION.

It is believed that the numerous facts brought together in this monograph have been so stated as to suggest the main conclusions to which they lead. However, it will be well at the close to make a formal statement of the more important of these general ideas.

(1) The first of these ideas is that the new political Italy was accompanied by a new educational Italy. The men who created the Kingdom understood thoroughly that the better education of the nation was essential to its greatness and even to its perpetuity. This is but one of many instances in modern history of important educational movements following hard upon great political crises. Parallels may be found in Prussia, where the foundations of the educational system that is so closely connected with her recent greatness were laid in the disasters of 1806; in the United States, where the civil war and the emancipation of the slaves greatly stimulated the extension and improvement of schools and education; in England, where the spread of democratic opinions and the repeated enlargements of suffrage have led to remarkable educational developments; in France, where an extraordinary expansion of educational activity followed the great reverses that the nation underwent in 1870-71. In fact, we have become so accustomed to this sequence that the work of Mazzini, Cavour, Garibaldi, and Victor Emmanuel would have seemed incomplete had the unification of Italy not been attended or followed by an educational renaissance.

(2) The system of education that has been built up in Italy is a thoroughly national system. It is national, first, because it was born

of the national spirit; secondly, because it is coextensive with the national territory; and thirdly, because it provides for all classes of society, from the lowest to the highest.

(3) This system is distinctly modern in all its aspects. Here the first fact to be noticed is that it is a state or secular system, as opposed to one that is religious or ecclesiastical. The Italian school is the civil school, in its origin, in its support and management, and in its aims and spirit.

(4) That the system is modern in its aims and spirit appears in the fact that it seeks to prepare the youth of the country for modern life. Attention may be particularly drawn to its completeness and universality; elementary instruction, ancient letters, modern letters, science in its numerous divisions, philosophy, mathematics, art in its various branches, the learned professions, and industrial and practical subjects are all carefully provided for. This completeness and symmetry, so characteristic of the so-called Latin nations, contrasts strongly with the empirical and one-sided educational development that has been going on at the same time in England.

(5) Still closer attention may be drawn to the emphasis that is laid on scientific instruction, and in fact on the so-called modern studies generally. This emphasis is seen even more strikingly in the universities than in the higher institutes and special schools of science. It is the more noteworthy because it declares itself in the land of the Renaissance, where also the classical tradition was always strong. Still it must not be forgotten that a thorough classical training in the gymnasium and lyceum is required of students entering the university for degrees in jurisprudence and medicine and surgery.

(6) While the former work in the fields of secondary and higher education has been continued and extended, the great endeavor has been to educate the common people. Much space has been given to this topic in the preceding pages, and it is not necessary to recapitulate or even to summarize the facts in this place. This is the most interesting and important aspect of the whole subject.

(7) The functions of the teacher are duly recognized. Witness the great number of normal schools and the legal provisions in relation to the qualification of teachers.

(8) Considering the Italian system of instruction as a movement directed to the reduction of the appalling ignorance of the country, we must say that it has been marked by intelligence and energy, and that it has been attended by very gratifying and reassuring results. If Italy shall go on for the next generation as she has gone on for the last one, she may plead good reason for being considered a well-educated country.

(9) Finally, the Italian system of public instruction is marked by the salient features of all public administration in the Latin countries—perhaps some would say continental countries. It may be said of Italy,

as it has been said of France, that "she has been strongly impregnated with the Roman civilization, and derives from the Latin genius an exaggerated respect for abstract logic, an excessive love of simple principles, and a dangerous passion for uniform solutions." No doubt this respect for abstract logic, this love of simple principles, and this passion for uniform solutions have had something to do with the completeness and symmetry that have already been remarked upon. Taken together, they also constitute the main cause of that strong centralization which is such a pronounced type of the Italian system, as compared with that of England, and still more as compared with the systems of the United States. However, the practical issue of centralization versus decentralization is never a question of abstract logic. Because in the United States it is wise, and even necessary, to commit large educational functions to the local authorities and to the people, it does not follow that it would be necessary or wise to do so in France or Italy. In those countries the local authorities and the people have never been accustomed to exercising such powers, and so are not prepared to exercise them. Even in our best-educated States the legislatures do not leave such matters as the studies to be taught in the elementary schools, the length of the school year, and compulsory attendance to local option. Still less could this be safely done in Italy. Hence the centralization of the system is not only thoroughly Italian, but it is also strictly necessary. There is a double reason, therefore, why the programmes of instruction in the primary and secondary schools should emanate from the central authority, and also why the ultimate supervisory power should be held by the same hands. Had the Parliament left the communes or provinces to move in the matter of popular education at their own time and in their own way, many of them would not have moved to this day, while still others would have moved but slowly and inefficiently. The only way in which popular education can be secured in large parts of the Kingdom, as in southern Italy, is for the national Government to set up and then enforce the standards. However, this is not peculiar to Italy; general education has commonly come from above, rarely from below. The instances are very few in which it can be said that the masses have educated themselves.

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- Medical schools, course of study in (1-6 years); Industrial schools in 1868, statistics of. 1870, p. 390; p. 442 (½ page).
- Main points of school law (4 lines); statistics of schools, 1864-1868. 1871, p. 473 (½ page).
- Detailed statistical presentation for 1871-72 of all grades, with statistics of special schools. 1872, pp. 406, 504 (9 pages).
- Tabulated statistics of universities; statistics of elementary and secondary education in 1872; evangelical school work; expenditures; illiteracy in penal institutions. 1873, pp. clxi-clxiii; p. clxxv (2 pages).
- Statistics for 1874; text with expenditure. 1874, pp. cxxxvii-viii (1 page).
- Students in Government and free universities in 1877; primary education compulsory; other statistics. 1875, 1876, (unimportant item); 1877, p. clxvi (½ page).
- Tabulated statistics of universities in 1877-78; education again made compulsory by law of July 15, 1877; technical schools supported by Government, communes, religious corporations, and private persons; general statistics. 1878, pp. clxvii-viii (1 page).

1879, p. cxcvi (4 Italian educators sent abroad to study school systems of other countries; education by religious orders, 16,000 priests and members of religious orders being engaged in teaching in Italian schools.

1880, pp. ccxv-ccxx (5½ pages). Statement in tabulated form of illiteracy in 1861-1871, and of elementary schools and pupils from 1861-1879; of adult schools, female boarding schools, etc. This is prefaced by a statement regarding the present constitution of Italy, the fundamental law of public instruction, teachers' salaries, and the school budget.

1881, p. cclviii (7 lines). Bill (of November 12, 1881) introduced to enforce school attendance of persons 14 to 16 years of age.

1882-83, pp. ccxxv-xiv (3½ pages). Statistics presented in tabulated form of schools, both private and public, for 1861-1881, with appropriations from 1871-1873, and a comparison made with other countries of Europe as to amounts appropriated; references are made to school law of 1877, which made instruction obligatory, and the number of communes carrying out the law are indicated.

1883-84, p. ccxxvii (1 page). Presentation of statistics for 1881-82, in which it is shown that out of 1,735,185 pupils registered only 232,929 presented themselves for examination, and only 166,185 passed satisfactorily. Reasons: Poor quality of teachers, poverty of people. Contents of circular of October, 1882, include examination from grade to grade, pupils graduating from third grade to attend evening school for a year, school inspectors to furnish annual list of children of school age to syndic, etc.

1884-85, pp. ccxc-ccxcii (2½ pages). Statistics for elementary schools are presented from official reports for 1882-83, the second and higher schools for 1883-84. The length of the course of study in most institutions is given. The expenditures by State, provinces, and communes for elementary education are also presented. Illiteracy (in 1881) in different parts of Italy is also indicated.

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1887-88, pp. 1010, 1014-1018. Educational periodicals tabulated as above; statistics for 1884-85 of elementary and normal schools.

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1889-90, Vol. I, pp. 551-555, 561-572; Vol. II, pp. 981, 1200, 1227-1228, 1672, 1673. Statistics of enrollment: Ratio to population; per capita of population; pay or free schools. Diagrams: Ratio to population under school influence; universities, their foundation, number of students in 1890-91. Provision for industrial education. Character of exhibits at Milan exhibition for education and hygienic appliances; information appertaining to progress of education (one-half page); table of enrollment, expenditures, per capita of population and enrollment for 1888-89.

1890-91, Vol. I, pp. 319-339, xviii-xxx, 369-372, 453, 454, Vol. II, p. 743. The report for 1890-91 contains an essay on education in Italy by Prof. A. Oldrini, with supplementary matter by Signor Commendatore Bodio, the director of the statistical bureau in Rome.

These essays on education in Italy include information concerning illiteracy—courses, percentages: Kindergartens, primary education, progress of schools since enactment of law for compulsory education in 1877. Secondary education (ginnasi and licei, technical schools and institutes): Rural, agricultural, industrial, and normal schools. Superior and special instruction: Universities, programmes and pending reforms, special schools and academies, academic institutes. Fine arts; libraries; the press; budget of public instruction in 1889-90. Information supplementary to above: Illiteracy in 1891 by territorial subdivision; infant schools; elementary education in 1871-72, in 1881-82, and in 1891-92; normal schools; secondary schools; statistics for different years; education of women; agricultural education; industrial, professional, and commercial education. Superior and special studies; academies of science and literature, fine arts, museums, antiquities, national monuments, libraries with statistics to 1890-91. Publications according to subject-matter. General provincial and municipal school administration. Maintenance and expenditure for educational institutions in 1889. Statistical presentation of youth below universities, in elementary, secondary, and higher schools, with percentages; expenditures per capita of pupils and population. Legal education, with statistics of law schools. Growth of the kindergarten.

No information from Italy.

Statistics tabulated: Elementary, normal; expenditures.

Monograph on public instruction in Italy, by Prof. B. A. Hinsdale.

Topical outline: Unification of Italy; summary and conclusion; educational conditions in 1861; general political facts; the Casati law, and the administration of public instruction; description and statistics of different grades of schools, from kindergarten to university and special schools; the school supply; teachers; financial status; public schools of Rome during twenty years; warfare against illiteracy.

An. Rep. 1891-92.

An. Rep. 1890-91.

An. Rep. 1893

pp. 325-383.

CHAPTER IX.

EDUCATION IN RUSSIA.¹

[The Russian educational system was presented in *entenso* in the Report of the Commissioner of Education for 1890-91, pp. 105-262. For details reference is made to that report.]

Material consulted.—Журнал Министерства Народнаго Просвещения, 1894.—Przeglad Pedagogiczny, 1894.—Sur l'éducation examinée dans ses rapports respectifs: religieux, moral, intellectuel et physique, par M. Cyrille Janovsky, curateur de l'arrondissement du Caucase.—Instituts pédagogiques, comme établissements destinés à préparer des maîtres pour les écoles secondaires, par M. Cyrille Janovsky.—Sur le développement individuel des élèves dans les établissements d'instruction en général et les écoles secondaires en particulier, par M. Cyrille Janovsky.—M. Kovalevsky in "Addresses and Proceedings of International Congress of Education, Chicago, 1893."—Larousse: Dictionnaire universel.—Buisson: Dictionnaire de Pédagogie et d'Instruction primaire.—Histoire de la Russie, par Alfred Rambaud.—La Russie (Revue Encyclopédique), 1891.—Bericht über den Stand des Unterrichtswesens, 1879-1884.—Encyclopaedie des Erziehungs- und Unterrichtswesens, von K. A. Schmid.—Die Reform der russischen Universitäten nach dem Gesetz vom 23. August 1884.—Russia, by Mackenzie Wallace.—The Empire of the Tsars and the Russians, by Leroy-Beaulieu.—Reports (from Russian Section of Chicago Exposition): Empress Marie Institutions; Ladies' Patriotic Society; Schools for the Blind; L'Oeuvre de la Femme à Moscou.—Revue Internationale de l'Enseignement, janvier 1895.—Pädagogium, April, 1894.—Allgemeine deutsche Lehrerzeitung, September 23, 1894.—Statesman's Year-Book, 1894 and 1895.

Population and administration.—Absolute hereditary monarchy: Area, 8,660,282 English square miles,² or one-seventh of the land surface of the globe. Population (in 1893), 118,014,187;³ European Russia, 99,553,024. Urban population for all Russia, 13,972,643; rural population, 102,016,800; in European Russia, urban, 10,505,700; rural, 77,648,200. Capital, St. Petersburg. Population (in 1892), 1,035,439. Minister of public instruction, Count Delianow; procurator of the Holy Synod, M. Pobiedonostzew.

The legislative, executive, and judicial power is united in the Czar, whose will alone is law; the administration of affairs in the Empire is intrusted to four councils, namely: (1) The council of State, established in its present form in 1810, and whose chief functions are to examine the proposed laws submitted by the ministers and to discuss the budget and expenditures; (2) the Ruling Senate, established

¹Prepared by Miss Frances Graham French, specialist in the school systems of northern and eastern Europe.

²Includes Finland. School system presented at close of this chapter.

in 1711, with functions of a deliberative and executive character; (3) the Holy Synod, established in 1721, which superintends the religious affairs of the Empire; (4) and the committee of ministers, eleven in number, who superintend affairs in their own special departments of the public service.

The Empire is divided into general governments (or vice-royalties), governments, and districts. In European Russia there are 68 governments and 635 districts; in Asiatic Russia, 4 general governments (Caucasus, Turkestan, the Steppes, the Amur), with 16 governments, 13 territories, and 3 districts. A governor-general, representing the Czar and controlling both military and civil offices, is at the head of each general government; a civil governor and a council of control (a military governor in frontier provinces) aid in the administration of local affairs; the mir,¹ a village community system, prevails in European Russia and in some parts of Siberia; the voloste, or cantons (a union of village communities), have their affairs presided over by an elder, elected at the cantonal assembly, which is composed of the delegates of the village community in proportion of one member to ten households.

The zemstvos,² governmental and district assemblies (composed of representatives elected by peasants, householders in towns, and landed proprietors), administer the economical affairs of government and district to some extent and supplement the acts of the rural community. Cities and towns have municipal³ organizations with similar power.

STATISTICAL DATA.

Viewed from the scholastic side, the Czar's dominions are divided into 14 educational districts, namely, St. Petersburg, Moscow, Kazan, Orenburg, Kharkoff, Odessa, Kieff, Vilna, Warsaw, Dorpat, Caucasus, Turkestan, West Siberia, and East Siberia. Each of these districts or circuits has a curator in charge, whose jurisdiction extends over all branches of instruction; the centralization of control at St. Petersburg is portrayed on page 391. The statistics relative to education in Russia are difficult to obtain, the educational authorities of the districts of Caucasus,⁴ Turkestan,⁵ and the Grand Duchy of Finland⁶ being the

¹The affairs of the mir are discussed and regulated in general assembly of all the heads of families. Each mir elects its own elder as executive to carry out its decisions. European Russia has 107,493 of these communities.

²During the years 1883-1894 the zemstvos existed in 361 of the 635 districts of European Russia.

³A law of 1894 reduced the power of the municipal government and placed it almost entirely under the governors nominated by the Czar.

⁴In Caucasus, in 1892-93, according to the report of the school administration, there were 19 lyceums, gymnasia, and realschulen, 5 normal schools, 16 lyceums and gymnasia for girls, with a total of 11,338 pupils (6,737 boys, 4,601 girls); 36 town schools, 7,052 pupils; 7 professional and 3 naval schools, with 740 pupils; 5 schools for mountaineers (595 boys); 89 private schools, with 2,828 boys and 979 girls; 914 elementary schools (46,889 boys, 12,869 girls); 147 Armenian schools; 434 various schools; 1,866 Mussulman and Jewish schools.

⁵Turkestan had, in 1893 (exclusive of Mussulman schools), 2 gymnasia (1 boys' and 1 girls'), 1 teachers' seminary, and 87 various schools (11 for girls and 38 mixed), having a total of 258 teachers and 4,124 pupils (1,361 girls); 260 children were taught trades. There were besides evening classes for the natives (400 pupils), and village schools were opened in 54 Russian villages out of 79. Some schools in towns are for Russians and natives alike.

⁶Statistics of Finland at close of this chapter on Russia.

only ones who have published detailed information since 1887. Dorpat—now called Zurier or Jurjew—an advanced educational center, does not present educational information outside of its university work. More than this, the data which reach the general public of other nationalities, through French, German, and English sources, present the various grades of instruction for different years, and hence it seems necessary to formulate estimates. According to statements made in the last decade by the minister of public instruction, the school system comprises elementary or people's schools (*narodnoe-uchilis-ché*), secondary, higher, and special schools. As the tabulated elementary statistics are for 1887 and those for secondary and higher institutions are in part for 1890, 1891, and 1893, an estimate is made, based upon a population of 97,500,000, as an average for these years, and with estimates of pupils of the different grades. Thus one finds in schools below the universities 2,457,921 students, or 2.5 per cent; in elementary schools, 2,243,566, or 90 per cent of the whole number enrolled; in secondary schools, 214,355 students, or 8 per cent. The universities have 13,870 students, an increase of 3,510 since 1884; in special schools are 4,627 pupils. Taking the whole population of the Empire, or 118,014,187, then the ratio of enrollment in elementary schools is 1.90 to the entire population, while only 20 per cent of the recruits are able to read and write. The ratio of children in and out of school in 1875 and in 1888 are thus approximated in the Rouski calendar and other semiofficial documents:

	1875.			1888.		
	Boys.	Girls.	Total.	Boys.	Girls.	Total.
At school.....	11.5	2.6	6.9	16.7	5.4	11.0
Not at school.....	88.5	97.5	93.1	83.3	94.6	89.0
Total.....	100.0	100.0	100.0	100.0	100.0	100.0

Presenting the elementary schools under their various subdivisions there are the parish schools, one of which is supposed to be established in each parish, and the district¹ schools (*nyezdnoe-uchilis ché*), one for each administrative district, and the city or town schools, with one school to every 1,000² inhabitants. Then there are the schools controlled by and reported upon by the Holy Synod, which formulates its own programmes and charges tuition fees to pupils who are not of the Orthodox-Catholic faith. These and a few other groups were reported as follows by the minister of education (or of popular enlightenment) in 1887:

¹ These are higher grade elementary schools which are gradually being transformed into urban schools; that is, graded schools.

² To 1,000 inhabitants there are about 50 children between 8 and 10 years of age.

Elementary education in 1887.

Ministry of public instruction.	Number of schools.	Boys.	Girls.
District schools } or higher elementary.....	181	13,857	.....
City schools.....	442	52,217	.....
Elementary schools <i>a</i>	24,329	1,219,663	339,514
Holy Synod:			
Boys' schools.....	181	31,593	.....
Girls' schools.....	53	.....	9,474
Parish schools.....	15,471	408,721	.....
Schools for indigents.....	3,415	52,681	10,325
Miscellaneous schools.....	35	1,520	793
Jewish schools:			
State schools.....	77	4,198	1,063
Private and communal.....	1,105	17,279	5,686
Elementary schools under the military.....	22	993	43
Cossack schools:			
Boys' schools.....	1,280	52,343	.....
Girls' schools.....	236	.....	16,338
Total <i>b</i>	46,880	1,451,609 408,721	383,236

a Classed under elementary schools are Sunday schools for adults, and in outlying sections there are ambulatory schools, the teachers of which after a few weeks' instruction move to other places. In the lower elementary grades girls and boys are often educated together, but girls of a higher class of society receive their earliest education at home. Lower grade technical schools rank with the elementary grades. The State elementary schools are open to all classes—ranking first in point of attendance are the schools in charge of the zemstvos, next those in charge of the communes, then those directly under the control of the ministry. Figures for Dorpat (Jurjew) educational district wanting.

b This office has no means of ascertaining the reason for the discrepancy between the sum of the several items and the totals printed beneath them.

In European Russia there is one elementary school for every 2,500 inhabitants; in Siberia one for every 3,345 inhabitants (1,446 schools and 49,118 pupils).

The elementary schools of the Empire are maintained by the State, which accords to village schools about 14 per cent of the amount of its school expenditures by the zemstvos, which give 17 per cent for education of the aggregate expenses of the zemstvos (amounting to \$2,648,347¹ for education in 1887) and by the communes or mirs. According to an annual statement of the financial budget, revised by the "Central Administration" and presented in the Statesman's Year Book for 1895, the schools of the Holy Synod in 1892 received \$613,252¹ from the imperial budget, while the synod itself contributed \$2,412,073.¹ But these amounts doubtless include what is intended for both the secondary and elementary grades under the control of the synod, their numbers not being specifically stated. Assuming, however, that the \$613,252 was only intended for elementary pupils, it would give \$1.17 per capita of enrollment as the State contribution for synod schools.

The total amount contributed for elementary education by the different ministries² in 1894 was \$2,543,475, but as the pupils in the various

¹ These computations are made on the basis of 35.3 cents to the ruble, silver being the nominal standard.

² It is well to state here that the greater proportion of educational institutions are controlled by the minister of public instruction and receive the State funds through that medium. But attached to the ministry of war are military schools, schools of civil engineering and artillery, cadet schools, and military gymnasia for the sons of officers, schools for engineers and subofficers, topographical and pyrotechnic

schools connected with these ministries are not reported, nor the amount contributed by zemstvos or mirs, it is impossible to state the whole amount expended per capita of population or enrollment with any degree of accuracy.

However, if one takes the enrollment in the elementary schools as presented in the table one finds \$1.13 to be the per capita as given by the State.

The secondary schools, including gymnasia, progymnasia, real schools (*realnaya skhola*), and institutes for girls are maintained by the State, which contributes 25 per cent of the aggregate expenditure, about 30 per cent of the remainder being made up by fees and the rest by grants from the zemstvos and municipalities. The universities are maintained in part by the State and in part through funds accruing from tuition fees, donations, etc. The amount contributed by the ministries in 1894 was \$6,910,401 for secondary schools, or \$32.19 per capita of enrollment, and \$2,574,948 for universities. For the total number of pupils reported in all grades of instruction the per capita of population was 12 cents—that is, if the State contribution simply includes the amount given by the different ministries, \$14,642,076, with the population 118,014,187 taken as a basis.

Statistics of schools above the elementary grades are here presented for the years indicated:

Secondary, higher, and professional education for 1890, 1891, and 1893.

	Schools.	Teachers.	Students.
Pedagogical institutes.....	78	822	5,586
Pedagogical seminaries, with practice schools.....	239	2,815	68,682
Gymnasia and progymnasia.....	90	1,403	18,827
Real schools.....	44	.....	4,769
Technical and industrial schools.....	55	1,049	17,297
Theological seminaries.....	113	.....	21,109
Military and naval schools.....	.....	.....	.....
Total secondary schools for boys.....	622	.....	136,270
Gymnasia and progymnasia for girls.....	343	.....	70,174
Institutes for girls.....	30	.....	7,911
Total secondary schools for girls.....	373	.....	78,085
Universities (1893).....	9	923	13,470
Special high schools.....	10	190	2,096
Women's university colleges (1890).....	1	.....	400
Theological schools (1891).....	4	127	709
Medical academy.....	1	.....	754
Military academies.....	4	.....	464
Agricultural schools.....	1	.....	306
Engineering schools.....	1	.....	238
Total higher institutions (incomplete).....	31	.....	18,497

schools (namely, where bombs, grenades, etc., are made), institutions from which the corps of pages graduate (sons and grandsons of generals only being admitted), schools of law, and the imperial lyceums of St. Petersburg and Moscow. Technical schools, of both elementary and secondary grades, are connected with ministries of navy and public works. The ministry of the imperial household has charge of schools training for the dramatic profession.

The State maintains only 1 school for 9,078 inhabitants in the governments where there is no zemstvo, 1 for 46,555 inhabitants in the territorial subdivisions which have a zemstvo, and 1 for 163,116 inhabitants in the Baltic provinces, so that it will be easily understood that the zemstvos are the principal source of maintenance for the public schools. The governments where there is no zemstvo furnish about 69 per cent of the total funds for education.

Serving to complete the school system are many special schools,¹ most of which are establishments of the State. Among them are polytechnic schools, forestry schools, institutions for the study of mining, bridge and road making, schools of veterinary surgery, the institute of oriental languages, lyceum of jurisprudence, naval and military schools of higher and lower grade. The centralization of authority over these schools is found at St. Petersburg.

Among the special schools² the Polytechnicum, at Riga, reported 50 professors in 1892-93 and 949 students. Studying rural economy were 139; chemistry, 293; school of engineering, 83; school of mechanical engineers, 264; of architecture, 26; of commerce, 144. Seventy-five students obtained final diplomas. The expenditures for the polytechnicum were \$141,798.

The Imperial Academy of Medicine (military), according to a late decision, only admits pupils to its second class who are provided with a diploma (first class) received at the State examinations in physics and chemistry. Of 278 candidates for admission in 1894 only 145 were suitably prepared. Two candidates having the requisite diploma entered the second class at once. This academy, located at St. Petersburg, has 21 "ordinary" professors, 11 "extraordinary," 67 private docents, and an extensive corps of other officials connected with it. Among its docents are specialists in anatomy, physiology, histology, and legal medicine.

The Historico-Philological Institute, established at St. Petersburg, a sort of normal school to prepare teachers for secondary establishments, had 70 pupils in 1894, most of whom received stipends from the Government. In the last year of the course they have exercises in practice teaching, and are expected to give instruction in the gymnasial classes connected with the institute. At the close of the year 1893-94, 6 pupils obtained graduation diplomas, 2 for history and 4 for the classics. All were provided with positions.

LENGTH OF SCHOOL YEAR AND AGES OF PUPILS.

The length of school year is not specified for the schools of elementary grades, but a general statement is made by the authorities reporting in regard to education in Russia that the common schools are never

¹ Auszug aus den Berichten an Seine Majestät den Kaiser über den Stand des Unterrichtswesens in den Jahren 1879-1884. St. Petersburg, 1888.

² See *Revue Internationale de l'Enseignement*, janvier 1895.

closed except for the summer holidays, i. e., from May 25 to August 20, on Sundays, and other public holidays.

In the secondary schools, or gymnasia, the school term is from August 16 or thereabouts to the middle of June. The holidays include a fortnight at Christmastide, the same at Easter, sixteen church holidays, and Sundays.

The ages of pupils throughout the different grades of schools are not definitely stated in any of the authoritative documents cited, but the city schools are, generally speaking, for pupils between 7 and 12 years of age.

At 10 years boys are presumed to be prepared for the gymnasia, and at from 10 to 11 years of age girls enter the institutes. In the military schools instruction commences with the tenth year. The gymnasial student is supposed to be prepared for entrance into the university at 18 years of age.

GENERAL SUPERVISION OF SCHOOLS.

As is stated by Jean Fleury,¹ lector in the University of St. Petersburg, and by Gustave Lejeal,² the school system of Russia is essentially under control of the State. In each of the 14 educational circuits a curator has extended jurisdiction, and he reports in regard to all educational institutions of the circuit to the minister of public instruction in St. Petersburg, and he in turn to the Czar. The minister, as the central authority, is aided by a scientific council whose duties include the adjustment of questions appertaining to elementary education. A special division in the ministry has charge of technical and industrial schools, and connected with the ministry is a board of examiners to investigate the qualifications of persons desiring to teach who may not be graduates from training schools. As aids to each curator are one or more governmental or district inspectors; then there are school councils to look more closely after local educational interests. In governments where there is no zemstvo the directors of the gymnasia have general control of schools. The gymnasia and progymnasia are under the immediate jurisdiction of the curator, whether these establishments are for girls or for boys. In this grade of schools for girls the directress is appointed by the curator and confirmed by the minister. The gymnasia for girls have also administrative and pedagogical councils,³ the latter composed of the director of the boys' gym-

¹ See Buisson: *Dictionnaire de Pédagogie et d'Instruction primaire*.

² See *Revue Encyclopedique*, décembre 1891: *La Russie*.

³ The council of administration is composed of persons of both sexes chosen by the corporations and societies supporting these schools; their duties are to choose a curatress and directress to examine as to requisite resources, to watch over the expenditures, to regulate employment of amounts allowed to the school, to limit tuition fees and indicate when there should be exemption therefrom, and to have general charge of the institution. The pedagogical council chooses the teachers, who are confirmed in their position by the curator of the district.

nasia or real school and the directress and other officials of the girls' school. City schools are under the direct control of an inspector, who is appointed by the governmental inspectors, by the zemstvos, or by the municipality, if either of these last-mentioned authorities maintains the schools. Private schools are subject to visits from the inspectors, local or governmental; parochial schools are, as heretofore stated, under control of the Holy Synod. The universities come under the jurisdiction of the curator and governmental inspector, the latter being vested with a part of the rights held by the rector to date of 1885. The Czar appoints the rector of the university, the minister of public instruction appoints the deans of the different faculties; a university council confers degrees, regulates programmes, distributes prizes, and reports upon any infringement of rules. Governmental boards of examiners—subdivided into the historico-philological,¹ the physico-mathematical, the legal, the oriental, and the medical, and whose chairmen are appointed by the minister of public instruction—decide as to the pedagogical status of the graduates; the preparation for academic degrees and the preparatory examinations from class to class are left, however, to the university authorities. Thus it will be observed that the greater proportion of educational institutions are under the direction of the minister of public instruction, which position has been filled for a number of years by Count Delianow. Yet there are, as heretofore stated, many schools attached to the other ministries, there being a complete system connected with the ministry of war. For more complete details reference is made to page 203 of the Report of the Commissioner of Education for 1890-91.

TEACHERS.

Preparation, appointment, salaries, and pensions.—The reports published by the ministry of public instruction in 1879-1884 indicate that persons who desire to become teachers (ouchiteli) in elementary grades are generally trained in pedagogical institutes, or in pedagogical seminaries; in the former for the higher elementary grades, in the latter for the lower grades. The latest reports give 78 of these institutions, with 5,586 students and 822 teachers giving instruction. The students of pedagogical institutes are generally recruited from graduates of elementary grades who have acted as assistant teachers for one year and who are at least 16 years of age. The pedagogical seminaries admit persons from 18 to 22 years of age who are exempt from military service. The individuals who receive governmental stipends are pledged to serve at least four years as teachers of elementary grades. Persons desiring to teach in secondary schools find numerous private institutions open to them for such training. But the teachers of secondary and higher institutions are usually recruited from those who have obtained degrees from the universities. There are training schools for

¹ Die Reform der russischen Universitäten nach dem Gesetz vom 23. August 1884.

teachers of infant and maternal schools, and also pedagogical conferences which give opportunities for practical talks and discussions on educational subjects.

A commission connected with the ministry of public instruction has charge of examining candidates of either sex who, without being graduates of a training school, desire to teach. Two kinds of diplomas are given, one entitling to the position of teacher in a public school, the other in a private school. Foreigners desiring to teach in Russia must pass an examination before this commission, no matter what diploma they may have from their own country.

Appointments to elementary schools are authorized by the local inspector after the required examinations are passed, to the gymnasias and scientific schools by the curator, to the schools of the Holy Synod by sanction of the bishop of the diocese.

Salaries vary in rural districts, but according to a statement made by M. Dimitri Protopopof, secretary of the committee on primary education in St. Petersburg, the teacher of a rural school averages about 25 rubles (silver, \$8.82; gold basis, \$19.30) per winter. These rural schools are often located in peasants' huts, where both lodging and food are given the teacher. Salaries for rural schools vary in the different governments. In the St. Petersburg government rural teachers average \$78 annually, says Jean Fleury,¹ lector in the University of St. Petersburg; in the Kieff government, \$41 a year; in the Saratov and Samara governments the salary varies from \$87 to \$105; for all Russia the average is \$67. According to statements made by M. Lejeal,² the teachers (*ouchiteli*) of urban and district—that is, graded—schools have free lodgings, and their salaries are between \$386 and \$482 a year.

Pensions are allowed to all holding positions under State authority in accordance with fixed laws for a requisite term³ of service. In addition to pensions accorded by the State, the teachers in divers governments and large cities have banded together during the last few years for mutual⁴ aid during term of service, during long illness, in case of accident, or for the benefit of widows and orphans of members of their profession. The plans of the different aid societies differ in some particulars, for in some the members aim to find places for teachers, or have established libraries and reading rooms for teachers or governesses, but the main object seems to be a general amelioration of the teacher's position when ill or disabled. The pension funds created by the monthly or annual payments of members of these organizations are allotted as follows:

¹ See Buisson: *Dictionnaire de Pédagogie et d'Instruction primaire*.

² See *Revue Encyclopédique*, décembre 1891: *La Russie*.

³ Presented in detail on p. 207 (Vol. I), of the Report of the Commissioner of Education for 1890-91.

⁴ *Pædagogium*, April, 1894.

	Class 1.	Class 2.	Class 3.	Class 4.
	<i>a Rubles.</i>	<i>Rubles.</i>	<i>Rubles.</i>	<i>Rubles.</i>
Pensions after fifteen years.....	25	50	100	200
Pensions after twenty years.....	45	90	180	360
Pensions after twenty five years (b).....	80	150	300	600

a The ruble, according to a silver standard, is 35.3 cents; with gold as a basis, 77.2 cents.

b The payment after fifteen or twenty years' service is conditional; after twenty-five years unconditional.

COURSES OF STUDY.¹

Schools which rank below or with the elementary grades, such as maternal or infant schools, asylums, etc., aim first to train the powers of observation, to give the necessary elements of knowledge, and to inculcate religious and moral ideas. The elementary schools of village or hamlet may have one, two, or three classes, in which are taught reading, writing, elements of arithmetic, and singing. In cities, the higher grade elementary schools have six-year courses, completion of which entitles the pupil to enter the governmental service without additional examination, or a four years' course leads to the gymnasia. There are often technical divisions in these schools, so that trades may be learned. The district schools, now in process of transformation, include in their course of study religious instruction, addition, subtraction, multiplication, and simple fractions, the elements of history, geography, and natural history. At the close of the third year the pupils aspiring to a certificate for elementary studies appear before the inspector for examination. Technical and industrial schools have courses parallel to those of secondary and elementary grades. The lower grades aim to train artisans for domestic and village industries.

The schools of the Holy Synod give prominence to religious instruction, reading, writing, and arithmetic coming next in point of order. In each important town or city there is to be one or more gymnasia, which institutions, in their eight classes, aim to be a continuation of the higher elementary schools, and, subordinating other studies to the classics, to prepare for the universities. The progymnasia have courses similar to the gymnasia, but without the ancient languages. The real schools prepare for practical life, hence natural sciences and mathematics lead. The eight-year courses of study in the gymnasia for girls and three years in a progymnasia are, by regulation of May 24, 1870, rendered uniform with the gymnasia and progymnasia for boys.

State institutes, with a six years' course of study, admit daughters of the territorial nobility, and are presided over by widows of higher State officials, who are aided by inspectresses as directors of studies. The prerequisites of admission are reading, writing, arithmetic, French,

¹ These statements are taken from the reports published by the ministry of public instruction in 1879-1884, from the articles by MM. Jean Fleury, lector of the University of St. Petersburg, and Gustave Lejeal; also from the *Encyclopædie des Erziehungs- und Unterrichtswesen*.

and German. Other establishments for girls, open to all irrespective of rank, are under the supervision of the minister of public instruction, and have classes parallel with the schools for boys. The passing of the graduation examination in gymnasia and institutes admits women to courses given by university professors and to special courses in medicine.

The universities differ somewhat in methods in the different localities, and their courses of study were fully described on pages 221-226 of the Report of the Commissioner of Education for 1890-91, but it may be said that the passing of an examination before the commission of the faculty to which accredited entitles to a diploma of first or second grade. In the medical faculty the first-grade diploma, that of a physician, gives the right to practice and to present one's self for the doctorate degree. The conditions of admission of students to the University of St. Petersburg in 1892-93 are here presented (reported in the *Revue Internationale de l'Enseignement*). Students may be admitted if they have followed the course of a gymnasia in the St. Petersburg educational circuit and have obtained the graduation diploma, which is to be accompanied by a certificate of good habits from the gymnasial authorities. Admission in special cases is granted to those outside of the university "circonscription," providing they have the requisite gymnasial diploma of their immediate vicinity, accompanied by a similar evidence of good character. The minister of public instruction adds to the above regulations, which emanate from the rector of the University of St. Petersburg, that Hebrews are to be admitted only in limited numbers, the proportion not to be over 3 to the 100 of the total number of students. The students must pay 25 rubles (\$8.82) for entrance to the university, and for each course there are fees in accordance with university regulations. Request for admission must be sent to the rector between July 15 and August 10, in which request the faculty and course must be indicated. Appended to the request must be the gymnasial certificate, dates of birth, baptism, and confirmation; the passport permitting the person to quit the commune where he is a resident; the certificate indicating accomplishment of military duties; three photographs of himself to be deposited with the authorities, as required; also a certificate of good moral character. Should any of these documents be in a foreign tongue, they must be translated into Russian by a competent translator. Fees must be paid in propria persona, and not forwarded by mail nor brought by another person.

EDUCATION OF THE BLIND.

At the date of the first presentation of education in Russia no data were available regarding the defective classes, beyond the mere fact that there were thirteen schools for the deaf and four for the blind. Since then a report, published by the authorities at St. Petersburg for the Columbian Exposition, has been received which gives the following information:

The Imperial Society for the Education and Relief of the Blind opened its first school for the blind in St. Petersburg in 1881, and since that date 14 schools have been opened and 400 blind pupils educated. The Alexander-Marie School, with 100 pupils, has been developed into a model institute, and, since 1889, is located in a finely constructed building with all modern appliances. The provincial schools for the blind are situated at Kief, Reval, Kazan, Kostronia, Voronege, Chaskoff, Odessa, Moscow, Perm, and Smolensk. Trade-homes have also been established by the society, and publications containing useful information, translations, etc., have been placed within reach of the students. Preventive measures against blindness have been encouraged by the society, through the establishment of beds in the eye infirmaries in Charkoff, St. Petersburg, Moscow, and Novotcherkask. An eye ambulance was started in 1891 at Taschkent (Asiatic Russia), and a second is to be established at Tiflis, the object being to transport poor persons suffering from diseases of the eye to the nearest infirmary.

CURRENT MOVEMENTS AND DISCUSSIONS.

Briefly stated such may be said to be the main features of the Russian school system to date. For more explicit and detailed account, with an expansion in the line of school methods and management, courses of study, reform movements in universities, the trend of industrial and technical development, and the supplementary aids to education, reference is made to the presentation of the Russian school system in extenso, found on pages 195-262 of the Report of the Commissioner of Education for 1890-91.

It may be well to add here, however, a brief summarization of the current movements and discussions along educational lines, as gleaned through the press and from new books which have appeared within the last eighteen months. The general trend of educational affairs is toward a modification of existing conditions. In the frontier districts the tendency is to more thoroughly Russianize the schools so that the youth growing up to be citizens may become more patriotic and a more thoroughly national feeling may be inculcated.

Instruction in both horticulture and agriculture has been officially introduced in the primary schools; private individuals and the provincial authorities freely giving grants of lands to schools and to teachers' seminaries for fields and orchards. Many schools have plots of arable land and gardens cared for by the pupils, which schools become centers of education in these branches.

The committees engaged in the discussion of educational questions generally consider that more attention should be given to the formation of a stronger religious and moral basis, and that such teachings should enter more fully into the course of study, for they concede that "a development of the intellect without religious and moral teachings does not tend toward the highest cultivation of the mind."

A determined effort is being made to enforce compulsory education throughout the Empire, and the school officials of several of the governments have been called to St. Petersburg to discuss the probabilities of such enforcement in their own special divisions. In the governments of Charkow, Poltawa, Kursk, and Woronesch it has been decided by the curators of school circuits to enforce obligatory attendance from the beginning of 1895-96.

An effort is being made to carry out the suggestions of the congress for the study of technical and industrial education, so that village industries may be increased and the instruction of the people in the outlying governments of Russia may be better suited to the needs of the rural populations. The authorities and citizens naturally hope to advance the interests of the villagers and to still further develop manual training in the schools of the Empire. At present manual training¹ is taught in 4 teachers' colleges, 15 seminaries for teachers, 6 civil gymnasiums and schools, in 18 military colleges, in 11 temporary manual training courses for teachers, and in about 150 town schools and village elementary schools. According to the opinion of the Russian pedagogue, manual training "must be taught in a thoroughly systematic manner; it must awaken the interest of the children for physical exercise; it must accustom the children to order, punctuality, and cleanliness; it must correspond to the physical and intellectual powers of children; it must develop the æsthetic feeling; it must serve as a recreation for children when they are tired by their intellectual work." In fact, manual training in Russia is "considered to be more an object of general education than one of a special professional character," and its course forms a series of successive lessons.

The gradual transformation of "middle schools" into complete gymnasias, especially in the Baltic provinces, is still going on. The Russian Government proposes the founding of professorships of "folk music" in some of the Russian universities. In connection with the secondary schools the subject of the advisability of modifying the study of Latin and Greek on the school programmes is being discussed, as is also the aim and method of teaching modern languages in these grades.

The conditions and requirements in the universities are being gradually modified, in consonance with the suggestions of the commissions which have discussed the subject since 1884. (See pp. 221-225 of the Report of the United States Commissioner of Education for 1890-91.) The main object seems to be to more thoroughly nationalize the universities, to bring about a more practical line of work with fewer studies and less cramming for examination, and to require a higher grade examination for admission. As is stated in the *Revue Internationale de l'Enseignement*, instruction in the universities is gradually being limited to that given by professors of Russian nationality. In Dorpat

¹ Manual Training in Russia, by E. Kovalevsky, in *Addresses and Proceedings of International Congress of Education*, Chicago, 1893.

University a Russian inspector has been installed in place of the rector, liberty of study has been curtailed, and the student corporations have been gradually done away with during 1894. Restrictive decrees tend to more thoroughly Russianize this university, and, in accordance with the new methods adopted since the abolishing of the functions of a rector, the plans and forms which have heretofore governed the university, and which emanated from German sources, have gradually disappeared during the year 1894.

In Poland the educational questions under discussion, as indicated in the *Przegląd Pedagogiczny*, include the best methods for inculcation of moral teachings; different methods of teaching geography, arithmetic, religion, domestic and agricultural economy, and also, the best plans to be used in the giving of historical instruction. Educational movements in other countries are also chronicled in this same pedagogical review, as the editors seem to consider it desirable that the people have cognizance of pedagogical questions in the United States, in Prussia, in Austria, and elsewhere.

In the Caucasus, as indicated by late publications¹ from Tiflis, the questions under discussion, or requiring discussion, are those pertaining to the study of the Russian language and literature; how Latin should be taught in the first and second classes of the gymnasia; what is needed in schools connected with military institutions; needed improvements in the study of ancient and modern languages, geography, and mathematics in the schools of that subdivision of the Empire; the need of an organization of pedagogical institutes for the preparation of teachers in gymnasia and real schools, with the object of benefiting the teacher mentally and physically. It is stated that each student should have opportunities for teaching in a practice school attached to the institution where studying, and that the diplomas of doctor and licentiate in pedagogy should be required of the graduates who desire to become teachers. What is most needed is a corps of teachers well versed in the science of education and not limited to special branches. The subjects of study in elementary schools and the length of school hours throughout the different grades are being discussed. The individual development of pupils in educational establishments, generally speaking, and in secondary schools in particular, is a question which receives due consideration. Physical training also becomes a subject for discussion, for as the physical condition affects the mental, so from the earliest age care of the body should be taken, but all methods of physical culture should be in accordance with the natural strength, so that no abnormal conditions be developed.

¹ I. Sur l'éducation examinée dans ses rapports respectifs—religieux, moral, intellectuel et physique par M. Cyrille Janovsky. II. Instituts pédagogiques, comme établissements destinés à préparer des maîtres pour les écoles secondaires, par M. Cyrille Janovsky. III. Sur le développement individuel des élèves dans les établissements d'instruction en général et les écoles secondaires en particulier, par M. Cyrille Janovsky.

The education of girls receives greater consideration by the authorities since it is understood that in some villages "there is only 1 girl to 6 boys in school."¹ One outcome of this decision was the opening of a new school, on Grand Duchess Xenia's birthday, for the daughters of impoverished noblemen. This school accommodates 350 half orphans, has a regular course of study, and gives instruction in practical industries.

A commission is studying the subject of elementary education² as carried on in other countries, with a view to the establishment of public elementary education throughout Russia. This commission or committee is connected with the Imperial Society for the Investigation of Economic Questions. According to the "*Notice sur les travaux et le personnel du Comité de l'instruction primaire près la Société impériale libre économique*," the members studying educational questions numbered 644 on January 1, 1894, and there were eight subcommittees.

Fifty-three members took part in the committee meetings; seven formed the council. During the year there had been seventeen general assembly meetings and twenty-two sessions of the council. The work of the committees is indicated in part by their titles, i. e., (1) committee on publication of books for the people; (2) committee on editing a systematic résumé of school literature; (3) library committee; (4) ways and means committee; (5) committee on aid to pupils of rural schools in famine-stricken districts; (6) statistical committee investigating the conditions of instruction and need of enlightenment of the people; (7) committee charged with publication of the works of Koltzoff—a popular poet; (8) committee to obtain funds for the establishment of the A. N. Engelhardt school (to be named in honor of a professor of chemistry and a promoter of agricultural studies).

Among the questions which came up for discussion were the advisability of the study of elementary agriculture in rural schools, and the foundation of statutes for societies for popularizing education. The committee on elementary education placed themselves in communication with the zemstvos and offered to aid them in bringing about an improvement of educational conditions: (1) By suggesting the best textbooks; (2) by suggesting the formation of school libraries. The result of the interchange of educational ideas brought a request for an appropriation of 25,000 rubles to help establish 100 school libraries—at the rate of 250 each—in the zemstvos which were endeavoring to create such aids to learning. The discussions concerning the study of agriculture in normal schools culminated in the decision that the people of rural districts did not need military gymnastics, sacred hymns, and the elements of agriculture, nearly as much as they needed to know how to

¹ Allgemeine deutsche Lehrerzeitung, September, 1894.

² Reports bearing upon the status of education in the United States are under study by this committee. The intention is to ameliorate existing conditions, and, if possible, to establish a national system of education throughout Russia.

read, and to read in the most elevated diction. The committees decided that to teach the elements of agriculture and horticulture technically trained teachers are required, and while it would be an excellent matter to give such instruction, the people had other and greater needs at present, and, consequently, professional (that is, technical or industrial) education should be kept quite apart from elementary education. The committee for elementary education was the means of purchasing and distributing 48,992 books to schools; gifts of books to the committee, 6,348; total distribution, 51,500 books to 446 places.

The distribution extended over 59 provinces, and 86 per cent of the total came into the possession of the governments of Central Russia, where there are *zemstvos*—these local governments having schools which give general instruction to the pupils. The committee also acted as agent for the formation and forwarding of small school libraries, in accordance with requests from societies, institutions, etc. The committee in charge of publication of books for the people engaged men well known in science and pedagogy in Russia to aid them, and “popular scientific works in all branches of science” are to be published this coming year, while 61 of the best examples of the literature of Russia and other countries have been analyzed within seven months and 27 chosen for publication. The committee having in preparation a résumé of school literature has already published eight parts containing 1,650 entries, with a description of each subject, such as pedagogy, the national language, history, geography, medicine, and hygiene, gymnastics, singing, drawing, and manual training. The library committee reported 7,915 books and 3,597 engravings at beginning of the year and 1,823 additions during the year. This collection contains books on school legislation, official documents, and reports of ministers of education from Sweden, Norway, France, Germany, Roumania, Servia, and the United States, and forms the embryo of a valuable pedagogical library.

The committee in charge of the tenth anniversary celebration of schools, held on Sunday in the suburbs of the capital for the benefit of workmen employed in factories, etc., reported that 5,042 pupils had been under instruction—their ages varying from 15 to 40 years; evening classes, lectures, illustrated by magic lantern, and a library have added to the interest of the work. Seventy-two teachers give their time gratuitously. Methods are discussed at the general assembly of the teachers; at the close of the year reports are made to the inspector of the people's schools of the district of St. Petersburg, who presides at the examinations. The special evening classes, opened in 1889, have instruction in catechism, Russian language, history, geography, arithmetic, geometry, physics, chemistry, mechanics, and drawing. The pupils pay 50 kopecks a month. Most of the pupils come into these schools for two hours of study and instruction after twelve hours of labor, and sometimes they decline the emoluments for extra hours so that they may attend these evening classes.

EDUCATIONAL AND CHARITABLE WORK.

A short historical sketch of the Marie educational and charitable institutions, which are under the immediate patronage of their Majesties the Czar and Czarina, was prepared for the Columbian Exposition at Chicago. The value and amount of work accomplished by these institutions since their earliest beginnings (under Catherine II, 1762-1796), the present conditions (in 1892), and the completeness of detail, seem to render this sketch of value to the student, hence the main facts are presented:

From the remotest time up to the accession of Peter the Great the social organization of Russia was based on the patriarchal idea, and thus necessarily involved the strict exclusion of women from all participation and share in public life.

So long as this state of things continued women were naturally denied all such instruction as, while developing their intelligence, would at the same time enable them to superintend and direct the first and most elementary education of their children.

Education, even of the most limited kind, was regarded as a privilege to be zealously reserved to men, and if from time to time we find a few rare exceptions in the case of brilliantly endowed and widely instructed women, such exceptions were exclusively peculiar to monastic and conventual life. * * *

With the accession to the throne of Catherine II, the worthy successor of Peter the Great, commences a new epoch in Russian social life. The sovereigns of the country now began to take a direct and special interest in the education of the women of Russia.

Among the very few of her counselors who were disposed or able to aid her in this great work, the philanthropist Betski occupies the first and most prominent place. He understood that the education of women could only have a healthy influence on the social development and general welfare of the country. One of the most highly cultured men of his age, he believed it possible to "create a new race of fathers and mothers." It was with this object that he proposed the establishment of boarding schools in which girls of noble birth might be brought up and educated in strict isolation from the outer world.

Accordingly, on the 5th of May, 1764, the Empress issued her royal order for the establishment of an educational home for girls of noble birth; and the buildings of the Convent of the Resurrection were by her express command made over to the new school.

Scarcely a year had passed when, at her initiation, a branch establishment, designed for young girls of the middle class of society, was opened in the same building.

Parents, on making application for the admission of their children into one or the other of these institutions, were required to give in a written pledge to the authorities that, save in cases of dangerous illness or proved incapacity for school work, the children should not be withdrawn till they had completed the full and entire course of studies.

The age at which pupils were admitted was fixed at 5 and 6 years, the whole course of studies extending over a period of twelve years. In each of the two schools there were four classes. The programme of studies for the first class included religion, the Russian and three foreign languages, arithmetic, music, drawing, dancing, sewing, and knitting; that for the second class further included history, geography, and the elements of rural economy. Architecture and heraldry formed the additional subjects for the third class, while a course of reading in history and literature served to familiarize the pupils with leading events in the social

and intellectual progress of the world. The repetition of all that had been taught in the lower divisions formed the principal item in the programme for the fourth class. We may add that in the Educational Home for Girls of Noble Birth particular attention was paid to instruction in etiquette and the observance of the laws of polite society.

The course of studies pursued in the school for girls of the middle class was, as we might expect, more limited in its extent, special attention being given to all kinds of needlework. The rules laid down for the fourth class required the girls to be well trained in household economy, and they were therefore exercised in all manual work necessary for the proper management of a home, and particularly in cooking, sewing, knitting, weaving, etc.

The immediate administration of these two establishments was intrusted to a directress, assisted by an inspectress; besides whom, four persons were appointed to supervise the scholastic and domestic affairs of the institutions. The latter were chosen either from among the members of the Imperial Senate or from among those directly nominated by the Empress herself, and fulfilled the duties of their office gratuitously. Their functions were of a purely honorary character, and consisted in the due examination of the titles to nobility of all candidates who presented themselves, and in the general administration and control of the establishments.

But while thus busied with laying the foundation of a practical education for "future mothers," the Empress did not neglect or forget those unfortunate children who from their very birth had been deprived of a mother's love and care. It was for this purpose that the Empress, in accordance with a plan previously drawn up by Betski, opened in 1763 two large foundling hospitals, one at Moscow and the other at St. Petersburg. They were placed under the direct control of two tutelary councils that were created especially for this purpose in either capital. Each council was originally composed of six members, who received the title of guardians and assistant guardians, but the number was subsequently reduced to four. According to a regulation, which, however, up to 1798, was not strictly followed, they were expected to fulfill their duties gratuitously.

Imbued with a profound love for mankind, Betski placed these foundling hospitals on as firm and secure a basis as circumstances allowed him. Not possessing adequate funds to realize his plans, he before long succeeded in obtaining donations sufficient to cover the expenses of constructing the first and most necessary portions of the buildings.

In 1772 he organized auction and saving banks in St. Petersburg and Moscow, the revenues of which guaranteed to the foundling hospitals a permanent existence. As a further contribution to their support, a tax was laid on all tickets of admission to public places of amusement, and they were accorded an exclusive monopoly in the manufacture and sale of playing cards. At the same time numerous legacies were made in their favor by private persons, and subventions were granted in their support by the Empress and Csarevitch.

Not long after Prince Demidoff contributed 205,000 rubles toward the establishment of a commercial school for a hundred boys belonging to the mercantile class.

This school, founded in 1774 and annexed to the Moscow Foundling Hospital, was the last of the charitable institutions established by Catherine II. * * *

On November 12, 1796, the Empress Marie Feodorovna¹ assumed the immediate direction of the Educational Home for Girls of Noble Birth and its branch school for girls of the middle class of society.

¹ The Empress Marie Feodorovna, daughter of the Duke of Württemberg, was born at Stettin, October 5, 1759, was betrothed to the Grand Duke Paul, July 12, 1776, and arrived at St. Petersburg August 31 of the same year. The marriage of their Imperial Highnesses was celebrated September 26, the Grand Duke Paul succeeded to the throne November 6, 1796, and the coronation of the Emperor and Empress took place at Moscow April 5, 1797.

The assumption of this post on the part of the Empress was signalized by several munificent contributions to the support of these establishments. On the day following her nomination she endowed the institutions with an annuity of 15,000 rubles from her private purse; and this sum formed the nucleus of the so-called "casket capital," which rapidly increased and during the life of its founder reached the total amount of 1,300,060 rubles.

The Empress further effected several salutary reforms in the general plan of education hitherto adopted in these schools. In the higher school the number of pupils was considerably increased, the age of admission was raised to 8 and 9 years, and the term of studies was reduced to nine years. At the same time foreign languages, music, and dancing were excluded from the programme of studies in the branch school, the entire course of instruction was limited to six years, and the age of admission was raised to 12 years.

In May, 1797, with the Emperor's sanction, Her Majesty assumed the supreme direction of the foundling hospitals, the saving banks, and the commercial school. * * *

Certain defects in the organization of the tutelary councils required correction. In order to bring the activity of the different charitable institutions into full harmony, and to secure their due and proper control, the Empress proposed that the members of the councils should either individually undertake the management of one establishment, or share with one or more of their colleagues the general management of all the establishments. With this object the tutelary councils were reconstructed, December 23, 1797, on a basis that but slightly differed from the plan already in existence. The members of the council, formerly called guardians and assistant guardians, now took the title of honorary guardians, and were to be chosen from among the nobility by the reigning sovereign. They were expected to serve gratuitously and to perform their duties from "a love for their country and humanity." Their number remained the same as before, and, over and above their responsibility for the general administration, each one of them was also individually responsible for the superintendence of the particular section intrusted to his care.

In the spring of 1798, when Senator Alexander Protasoff, one of the honorary guardians, was appointed curator of the commercial school, the Empress proceeded to a thorough revision of its statutes. From a close and minute study of the past history of this school, Her Majesty perceived that it had in no way fulfilled the object with which it had originally been established. During the first twenty-five years of its existence not more than 12 of the pupils on leaving the school obtained places as accountants, the rest being engaged as ordinary copyists or junior clerks in the different chancelleries. With the view of restoring the school to its primary destination, the Empress had new regulations drawn up, and these received the Imperial sanction on May 10, 1799. By virtue of these revised statutes, the number of Demidoff scholars, which was out of proportion with the interest from the capital invested, was restricted to 55, the age of admission was fixed at 8 and 9 years, and the course of studies was limited to nine in place of twelve years.

In October, 1800, the school was removed from Moscow to St. Petersburg, since, to quote the words of the Empress in her circular addressed to the council, "the situation of the capital and its two ports, those of St. Petersburg and Cronstadt, offers greater facilities to the practical study of commerce." Four years later the Moscow merchants established a new commercial school on their own account.

By her indefatigable activity, ameliorating and perfecting the organization of the then existing establishments, the Empress inaugurated a whole series of new educational and benevolent institutions. Thus, in 1798 and in 1802, the number of educational institutions was increased by the establishment of the St. Petersburg and Moscow Catherine Institutes. In 1807 the Military Orphan Home, afterwards called the Paul Institute, was placed under her direct patronage and from that year received a government annuity of 3,000 rubles. The Kharkof Institute was founded in 1817, and its statutes, which were drawn up in general conformity with the projects of Betski, but were of wider extension, authorized the admission not only of

girls of noble birth, but also of merchants' daughters, as well as of paying and non-paying scholars. The superintendents of the institute were expected both to find places for those scholars who had successfully finished their course of studies, and to aid them, as far as possible, in any dispute that might arise between them and the families in which they served, and further, if necessary, to defend any appeal that they might be advised to make to the law tribunals.

The leading features of these statutes, originally drawn up for a provincial institute, but subsequently applied to the other schools, have been maintained with slight modifications up to the present time.

Nor did the Empress in her numerous works of philanthropy forget the daughters of her soldiers and sailors. In 1820 and in 1823 two schools were opened for the daughters of soldiers belonging to the guards, and in 1826 two more schools were founded for the daughters of sailors, one in Sebastopol and the other in Nicholaieff.

In the year 1806 the Empress founded a school on her estate at Pavlovsk, in the neighborhood of St. Petersburg, a school for the deaf and dumb of both sexes, and this school, which four years later was removed to St. Petersburg, was the object of her special and untiring care throughout her life. A capital of 156,000 rubles was deposited in one of the savings banks to found a scholarship fund for pupils placed at the school in Her Majesty's name.

In 1802 the Empress established a third foundling hospital, and took upon herself to defray all expenses necessary for its maintenance and support.

But among the more important benevolent institutions founded by the Empress and still existing, we must not forget to mention the St. Petersburg and Moscow widow homes. These homes, or asylums, designed for the widows of soldiers and clerks in the civil service, were established by means of funds provided by the foundling hospitals, and at the same time the Empress contributed to each a sum of 1,500 rubles. Finally, in 1828, the Empress created a board of trustees for the administration of all institutions dependent on the commission of public charity, and these institutions were placed under her direct and immediate protection. At her death in 1828 all the institutions under her supervision were grouped under the general name of the Marie institutions.

Immediately after the death of the Empress Marie Feodorovna, an imperial manifesto was issued, placing all the establishments formerly in care of the deceased under the charge and protection of His Majesty the Emperor. At the same time a secretary of state was appointed director of Her Majesty's chancellery, which was to be called for the future the fourth section of the privy chancellery of His Majesty the Emperor. Moreover, most of the educational establishments formerly patronized by the late Empress were, conformably to her wishes, placed under the direct authority of the Empress Alexandra Feodorovna. Nearly all these establishments were now located in the two capitals, and consequently the Emperor Nicholas considered it necessary to establish schools, homes, and institutes for girls in the provinces; the more so, as the pecuniary resources at his disposal were amply sufficient to allow his scheme to be carried out.

Between the years 1829 and 1845 institutes for girls of noble birth were opened in the cities of Odessa, Kazan, Kieff, Bielostock, Novo-Alexandrowsky (near Tiflis), Astrachan, Kertch, Tiflis, Nijni-Novgorod, Novotcherkask, Tamboff, Orenburg, Saratoff, Poltava, and other towns in the interior of Russia, as well as in some of the more distant cities of the Empire.

The number of Government schools for girls had thus increased so largely that in 1845 it was deemed necessary to create a supreme council of the educational establishments for young girls and which formed a special and distinct department of the ministry of public instruction. It was subsequently, in 1873, annexed to the tutelar councils, but still continued to be presided over by Prince Peter Oldenburg, and was exclusively composed of state officials who were well known equally for their erudition and for their zeal in all matters concerning the promotion of education among the different classes of Russian society.

But without doubt the most important of the many charitable works inaugurated by the Emperor Nicholas was the establishment of orphan homes. Owing to the cholera epidemic in the years 1830 and 1831, and the cruel ravages caused by the wars immediately preceding this terrible visitation, the number of orphans requiring immediate relief and help increased so rapidly that the existing institutions were quite unable to meet the demands made on them.

Two of these orphan homes were established by the Emperor in 1834; they were attached to the foundling hospitals, and were designed to receive each 60 orphan children.

At this time the programme of studies pursued in the schools attached to the foundling hospitals included Latin and French, and these languages were taught with the object of enabling the boys who had passed through the Latin classes to enter either the university or one of the military academies, while the girls who had gone through the French classes were qualified to enter private families as governesses. In giving such an advanced education to their pupils, the foundling hospitals no longer corresponded with their primary destination, and the Emperor wisely decided to change these conditions.

In 1837 the Latin and French classes were abolished, and in their place special schools were opened for the orphan children of soldiers and clerks in the civil service. The orphan home at the Moscow Foundling Hospital originally consisted of two divisions, one for 300 boys, and one for an equal number of girls; but in 1847 the boys' division was transformed into a cadet corps, and thus became excluded from the group of the Marie institutions. Moreover, the number of girls received into the home at St. Petersburg was raised to 700, and the Moscow home increased the number of its inmates to 800. At the same time a third home was opened at Gatchina, so that altogether no less than 2,000 orphan boys and girls were in this way provided for.

In 1834 the Alexandra Orphan Asylum, intended for children of the middle class of society, was established. At first children of both sexes, to the number of 340, were admitted, but from 1840 the asylum was restricted to girls. Two years later it was placed under the direct administration of the Orphan Institute. In the same year the Imperial Alexander Lyceum was removed from Tsarkoe Selo to St. Petersburg and annexed to the Marie institutions.

On January 4, 1854, after the death of M. Longinoff, secretary of state, the establishments founded by the Empresses Elisabeth Alexeievna and Alexandra Feodorovna, the superintendence of which had been intrusted to him, were also included in the group of the Marie institutions. These consisted of the Patriotic Institute, the Poltava and Tamboff institutes, the asylum for children, and the schools attached to the St. Petersburg Patriotic and Moscow Benevolent societies; in all, about 175 institutions. In the last year of the reign of the Emperor Nicholas the number of these educational and charitable institutions amounted to 365. In the former 9,534 boys and girls were being brought up and educated; in the hospitals 37,609 patients were receiving medical care and treatment, and no less than 60,898 young children and old people found help and relief in the foundling hospitals and asylums.

All these establishments continued to be under the direct patronage of the Empress Alexandra Feodorovna up to the day of her death, October 20, 1880, though the direction of the institutions had, after the death of her husband, been divided between herself and the Empress Marie Alexandrovna, who, on November 6, 1860, assumed all the rights attached to the post so long held by the late Empress.

The year 1860 forms an important turning point in the history of the Marie institutions, as it opened a new era in the extension of a liberal education to those classes that had hitherto been excluded from the sphere of their activity.

But it was impossible to enlarge the area of public instruction unless the number of schools was considerably increased, for only in this way could the primary requirements of the poorer classes be adequately met or a solid education be given to children who did not possess the privileges of rank qualifying them to enter any

of the existing institutions. They were consequently obliged to content themselves with the education given in private schools, or had to be intrusted to the care of governesses and tutors, who were themselves often entirely uninstructed and had never received any pedagogical training.

For the first time since the establishment of Government institutes for young girls the wisdom and practicableness of Betski's fundamental principle that a girl can only be well and thoroughly educated in a boarding school began to be doubted and questioned, and before long it was decided to reform altogether the system that had hitherto prevailed.

The first public day school admitting girls of all conditions and religions was established April 19, 1858, according to a plan drawn up by Professor Vischnegradski. The success attending this first trial encouraged many towns to solicit permission to establish like schools entirely at their own expense and without receiving any subsidy whatever from the Government. These petitions became so numerous that in July, 1869, an imperial decree was issued ordering that only those public schools which received subsidies from the administrative council would be included in the number of the Marie institutions, and that all schools established and carried on by private persons would be placed under the direction of the ministry of public instruction. From the year 1870 the number of public schools for girls had invariably been greater than that of schools for boys; but they were found to be still sadly inadequate, and accordingly merchants of any guild and families, noble or otherwise, were allowed to place their daughters in any one of the Marie institutions on payment of certain fixed fees, the only exceptions being the Educational Home for Girls of Noble Birth, the St. Catharine, the Patriotic, and the orphan institutes, which still preserved the privilege of admitting only girls of noble parentage. Day scholars and half boarders were also admitted into some of the institutes on payment of a small fixed annual fee.

The operations of the loan and savings banks, which in 1828 reached the sum of 354,000,000 rubles, at this time covered a sum of not less than a milliard rubles. The revenues of these banks, which may be calculated to have been about 5,000,000 rubles, were appropriated to form an alienable capital, not only for the maintenance of the foundling hospitals and some of the other Marie institutions, but also for the partial support of the cadet corps.

It was in the same year, 1860, when the questions of the emancipation of the serfs and the reorganization of the imperial credit institutions had come to the front, that the loan and saving banks were brought under the direction of the ministry of finance, but on condition that all the Marie institutions should continue to be furnished with funds sufficient for their due maintenance and support.

The central administration also underwent several important changes, the St. Petersburg and Moscow tutelary councils and the supreme council being merged into one department under the name of the tutelary council of the Marie institutions. The council was divided into two principal sections, one for each of the two capitals, and, as reorganized on new bases in 1873, was invested with discretionary powers in all matters relating to their management, direction, and finances. The rights and functions of the honorary members, chosen and nominated by the Emperor himself, were further considerably enlarged.

The general direction of the establishments dependent on the privy chancellery of the Emperor was delegated to a director in chief, the control of the finances and all property belonging to the institutions being intrusted to a special department created for that purpose.

After the death of the Empress Marie Alexandrovna the Marie institutions were, by an imperial rescript dated May 29, 1880, placed under the protection of the Grand Duchess Tsarevna Marie Feodorovna.

This rescript was one of the last acts performed by the Emperor Alexander II on behalf of the Marie institutions, which at that time embraced 459 educational and charitable establishments. The number of boys and girls being brought up

and instructed in the different schools exceeded 20,000, while 68,161 persons were being treated in the hospitals and 80,963 poor children and adults were inmates of the foundling hospitals and asylums.

The present position (in 1892) of these establishments, which are actually under the direct protection of their Imperial Majesties the Emperor and Empress, show that they are conducted in strict adherence to the sacred aim with which they were originally founded—to succor the homeless, helpless, and forlorn, and to bring up the young in the principles of true religion and love to their neighbor.

The foundling hospitals have received since their foundation 103,043 children. There are now 107 primary and normal schools attached to these hospitals, in which a solid elementary education is being given to 3,293 boys and girls. The result of concentrating the work of these hospitals in the two capitals has been the amassing of a large number of children in one or two buildings, and a consequent large and abnormal rate of mortality. The first steps toward the decentralization of these hospitals were taken in 1891. In celebration of the silver wedding of their Majesties considerable sums were raised both by public bodies and by private persons for the establishment of crèches in the provinces, and they are now in full work in the towns of Vologda, Poltava, Ekaterineslaff, Morschansk, and Petrosavodsk.

The modest aim of the asylums for children is to feed and look after children whose parents are engaged all day in outdoor work. The children are instructed in the rudiments of the orthodox religion, reading, and writing, and in the asylums to which orphan homes are annexed there are also technical trade classes. The number of children received during 1891 into the 131 existing asylums was 13,645, of whom 4,420 were taken into orphan and boarding homes.

The pupils of the Deaf and Dumb School for Boys and Girls are taught by the oral system, the sign and manual system being used for those who are disinclined to follow the former method. In addition to this, they are instructed in religion, the Russian language, arithmetic, and the necessary trades. The school consists of 105 boy boarders and 65 girl boarders, besides 32 boys and 28 girls as day scholars. Of the 230 pupils, 138 are taught by the oral system.

Institutions for the relief of the blind.—In 1881 a small circle of persons belonging to the highest society of St. Petersburg, on the initiative of M. Grot, secretary of state, and under his presidency, established an association for the relief of the blind in Russia, which was called, in memory of the constant interest the late Empress had taken in helping the poor blind, Association for the Relief of the Blind, founded in memory of the Empress Marie Alexandrovna. In 1883 it was annexed to the Marie institutions.

The main object of the association consists in the establishment of schools for blind children and of trade homes for blind adults. Extending its aid to persons of both sexes, without any restriction as to the religion professed by those it succors, schools have already been started in the towns of St. Petersburg, Moscow, Kieff, Reval, Kazan, Kostroma, Kharkoff, Voronege, Odessa, Perm, Smolensk, Toulá, Samara, Chernigoff, and Oupha; public workshops have been established at Kamenetz and Oupha; asylums for the aged blind have been founded at St. Petersburg, Voronege, and Perm, and ophthalmic hospitals have been opened at Tiflis and Tashkent. All these establishments are supported by the members of the association and by public subscriptions. The resources of the association, with already 600 blind pupils in its schools, were augmented by a memorial gift of 1,000,000 rubles on the part of the late Emperor, Alexander II, immediately after the death of Her Majesty Marie Alexandrovna.

In the 39 hospitals the total number of persons who have received medical treatment is 350,154, of whom 326,395 have been out-patients and 23,759 have been indoor patients.

The institutes for girls, or boarding schools, with a course of education extending over seven years, teach all that is necessary for every educated woman in the fulfill-

ment of her home duties. The programme of studies followed in these schools consists of religion, the Russian, French, and German languages, geography, history, mathematics, zoology, pedagogy, caligraphy, drawing, music, singing, gymnastics, and dancing. Some of the schools have special pedagogic classes in which particular attention is paid to the study of foreign languages and to proof lessons for training the pupils in the art of teaching. The pupils, on passing the final examinations, are entitled to receive a diploma qualifying them to act as teachers in schools or as private governesses, and those who have received the highest possible marks during the whole course are also awarded "chiffres"—that is, bronze medals bearing the initials of the founders and attached to a silk ribbon—gold or silver medals, and books. There are in all 32 institutes, and the total number of scholars amounts to 7,680 girls.

The public schools for girls are chiefly day schools, though to some of them boarding schools are annexed.

Their programme of studies, with the exception of music, which is not taught them, is identical with that adopted in the institutes. Diplomas qualifying for the post of private teacher are granted those pupils who have duly passed the final examinations, the gold or silver medal being awarded on the same conditions as in the institutes. The schools at St. Petersburg have also special pedagogic classes, with a course of studies extending over a period of three years, the last year being devoted to practical training in teaching, for which purpose a progymnasium of four classes is intrusted to them. On finishing this course pupils have the right to receive a diploma qualifying them as teachers in the higher classes of public schools and institutes.

In 1891 the 30 public schools, together with the progymnasium and pedagogic classes, were attended by 10,664 scholars.

The programme of studies for the primary schools for girls is of a more limited kind than that adopted in the institutes and public schools.

These schools, organized in 1882 on the personal initiative of the Empress and called by her name, the Marie schools, were established to give a sound elementary education which should qualify girls for the pursuit of a business or professional career. In the Marie schools are taught religion, the Russian language, arithmetic, the history and geography of Russia, the rudiments of zoology, caligraphy, drawing, singing, and needlework. The full course of studies extends over a period of four years, during all which time particular attention is paid to needlework of every kind, with the aim of training the pupils for the calling of cutters and makers of clothes. They are three in number, two being at St. Petersburg and one at Vishni-Volotschock. In one of the former there is a special class for practical instruction in plain and fancy needlework. The primary schools are 71 in all, and are attended by 6,244 children of both sexes.

The educational institutions for boys are four in number—the Imperial Alexander Lyceum, two commercial schools, and the Nicholas Orphan Institute at Gatchina. The lyceum, with its university course of studies and juridical faculty, is a high school designed exclusively for the sons of nobles; the other two are secondary schools. The number of scholars educated in these four establishments amounts to 2,066 boys.

Thirty-six hospices aided 3,849 men, women, and children in 1891.

This sketch may be summed up by stating that during the year 1891 498,108 persons were aided and relieved by the Marie institutions, of which number 120,537 fell to the share of the foundling hospitals, the hospices, and the asylums; 350,154 to the share of the hospitals, and 27,417 to the share of the educational establishments.

The budget of the 472 institutions for the same year amounted to 11,244,105 rubles (\$3,969,169). The resources for their support are drawn from capitals previously formed, from donations granted by the imperial family, from payments made by scholars, from a subsidy of 5,000,000 rubles accorded by the State treasury, and, finally, from public contributions.

These contributions, amounting in twelve years to a capital of 10,000,000 rubles (\$3,530,000), amply testify to the intimate conviction of the Russian people that the administrative authorities, being under the direct control of their Imperial Majesties, will employ all the large resources at their disposal in promoting the cause for which the institutions intrusted to their care were first founded. They further afford a brilliant and incontrovertible proof that the Marie institutions, by the numerous and varied good works they foster, have succeeded in carrying out the humane and large-minded view that inspired their illustrious founders.

In this connection citations from "*L'œuvre de la femme à Moscou*," a work prepared for the Columbian Exposition, are of value. This is an account of feminine activity in education, in philanthropy, and in industries, both rural and urban, of the Moscow district. Societies¹ have been established for training women in practical pursuits by which they can earn a livelihood if necessary. Cooking, cutting of garments, skilled handiwork generally, and an intelligence bureau enter into the work. Especial effort is made to interest individuals in the science of education, and many women are trained for the position of teacher. Municipalities appoint women of the territorial nobility as patronesses of the urban schools, and those desiring to be instructresses for rural districts receive regular training in the public schools, with additional training in pedagogical courses. Many private institutions, under the auspices of ladies of the court, prepare their pupils for professions, such as nurse, modiste, milliner, housekeeper, cook, etc. The organization of philanthropic institutions in Moscow and other large cities includes hospitals for children and adults, public charities, homes for incurables, training schools for women physicians, for sanitary inspectors in manufactories, aid societies, organized help for those detained in prisons or reformatories, houses of refuge, asylums, etc. In manufacturing industries women take active part, in the Moscow government alone 36,912 women and 317 children being actively engaged in working in cloth, metals, wood, printing, canning cereals, fruits, etc. Rural industries, which are a special feature of Russian life, are often carried on in the homes, but there are many intermediate agents, and the general cooperation of women is obtained. In the Moscow government there are 62,164 industrial establishments and 141,339 persons engaged in the work. The industries include basket making, chair seating, manufacturing playthings for children, making furniture, pottery work, porcelain faience, combs, hats, and caps, leather work, lace making, knitting, making edging, fashioning undergarments, rolling cigarettes, fabricating fringes and other trimmings, knitting slippers, making straw hats, etc.

For persons who have aspirations beyond these industries for the people there are higher places for work, such as decorative art, technical drawing, the study of music and dramatic art, training for artistic careers, such as painting and sculpture, in all of which the woman of the

¹ Russie: Section de Moscou. Bureau des Dames institué par ordre de S. M. l'Impératrice. *L'œuvre de la femme à Moscou*.

period in Russia is steadily advancing toward a position where she may gain her livelihood, if she desires, or rank equally with those who have had opportunities since time immemorial to cultivate their talents.

In St. Petersburg the Ladies' Patriotic Society¹ (1812-1893) has under its management 16 day and boarding schools, with 2,362 pupils. In addition to the usual studies found in schools of this class, instruction is given in sewing, cutting, embroidery, washing and ironing, artificial flower and lace making, in embossing leather, and in painting on porcelain. At graduation the pupil receives a diploma from the board of trade in St. Petersburg entitling the graduate to become an assistant mistress.

. MEMORABLE DATES.

Ninth century: To Cyrille, a Byzantine Brother, an alphabet of thirty-eight letters is due, which alphabet, originally adopted from the Greeks, was modified to suit the Slavs, Bulgarians, and Servians. The Russian and Servian alphabets of the present day are derived from the Cyrillicque.

Tenth to seventeenth century: The ravages of the Tartar hordes checked the efforts of the Byzantine Brothers to disseminate a knowledge of reading and writing. With the fifteenth century came the first notable Roman Catholic influence, introduced into the country by the Poles. Schools were founded by them which greatly extended the Jesuit influence. The famous Greco-Latin-Slavonic school at Kief, which is generally considered to be the embryo of Kief University, dates from 1588, and became in 1633 an academy under a famous defender of the Greek Church, Archbishop Peter Magila. In 1629 another school was founded in Moscow, to which the more learned monks of Kief were brought as teachers. The more advanced education of the Kief monks was due to the Polish influence. These schools aimed to instruct in two languages, philosophy and theology. The embryo of Dorpat University dates from 1632; that of Helsingfors from 1640.

1689-1725: The earliest efforts to educate the Russian people are generally conceded to Peter the Great, for he brought Russia into relation with other nations and invited learned men to come to his domain to instruct in different branches of learning. He established special technical schools for engineers and for naval science, also military and naval schools. He created people's schools, founded schools for the clergy, for nobles, and for civil servants.² To him is due the extended German influence and the establishment of famous German schools, which exerted great influence for over a century and which now rank as gymnasia, and are subject to rules laid down by the ministry of public instruction.

¹Brief Historical Review of the St. Petersburg Ladies' Patriotic Society.

²The hierarchic scale established by Peter the Great comprises fourteen classes of civilians, called *technovniks*. The first three classes have the title "highest excellence," the fourth "excellence;" from that to the eighth "*vycokorodni*," or the hereditary nobility, and the remainder the title "*blagorodni*," or well born.

1741-1761: During this period are noted the encouragement by the Empress Elizabeth of the study of the French language and literature, the founding of the Academy of Fine Arts in St. Petersburg in 1757, which, by bringing French artists to Russia, greatly enhanced French influence, and the establishment of Moscow University in 1755.

1762-1796: Within these dates are chronicled the establishment of popular lay schools in districts and towns during the reign of Catherine II; the founding of gymnasia for secondary instruction; the establishment of institutions for the secondary education of young girls of noble families—the famous convent school of Smolna dates from the reign of Catherine II. Plans were laid for the establishment of universities, as there was no real vitality in the institutions for superior instruction already referred to. In 1782 a commission was appointed to take the necessary measures for the organization of elementary education; from 1786 on, the right of opening and teaching school was only accorded to those who could give proof of capacity.

1802-1803: An advancement of educational matters was perceptible in the beginning of the nineteenth century. In 1802 the first administrative organization was attempted through the creating of the office of minister of public instruction and through the division of the Empire into school circuits, and centralization was further aided by the appointment of officials representing the minister in the educational circuits. In 1803 commenced the transformation of middle-grade communal schools into gymnasia.

1804-1825: Establishment of the universities of Kharkof, Kazan, and St. Petersburg; decree that no person could become a civil servant (tchinovnik) unless he had passed through a gymnasia; school fees introduced which were used for teachers' salaries, to furnish awards for study and conduct, and for pensions.

1828-1858: Regular organization of secondary schools, which date from 1762 to 1796; reorganization of universities (law of 1835) so that they became teaching bodies rather than administrative bodies; schools placed under control of curators of school circuits; opening of first gymnasia for girls in 1858.

1860-1864: The emancipation of the serfs in 1860 caused a demand for more schools; a general plan received imperial sanction in 1862; in 1864 an elementary school law was promulgated which created three grades of education—elementary, secondary, and superior.

1867-1874: Supervision of elementary schools given to the zemstvo, and a school board formed in every district; in 1871 training schools for teachers were established; in 1872 real schools were organized to more thoroughly train students for practical life; in 1874 school councils were placed under direct charge of the ministry, the central authorities thus assuming control of education throughout the Empire.

1875-1884: Few changes are noted until, in 1883, a technical division was formed to carry out a plan of establishing industrial and technical

schools throughout the Empire; in 1884 parochial schools were reorganized and placed under the direction of the Holy Synod.

1888-1891: A scheme for technical schools was elaborated in 1888; a scheme for commercial and industrial schools had been introduced since 1889; a decree of April 24, 1890, transferred the "middle" schools of the Baltic district into gymnasia; a decree of December, 1889, deprived Dorpat University of its privileges of self-government; later decrees serve to more thoroughly Russianize this institution.

1891-1894: Establishment of a commission to study the subject of elementary education; decrees promulgated that private schools in Dorpat district can only be taught in the Russian language; efforts are being made to extend compulsory education throughout all divisions of the Czar's dominions. In the early part of 1895 it was stated that the subject of the patriarchal form of government of the mir was awakening discussion. It was considered that the mir might be inimical to the possibilities of a nationalization of the Russian governmental service.

BRIEF STATEMENT OF EDUCATION IN FINLAND.¹

[Detailed statement in the Report of the Commissioner of Education for 1888-89, pp. 222-235.]

Material consulted.—Statistisk Årsbok för Finland, 1894; Statistisk Öfversigt of Elementarläroverkens tillstånd och Verksamhet, 1891-92; Polytekniska Institutet i Finland, 1892-93; Le Grand Duché de Finlande: Notice Statistique par K. E. F. Ignatius; Revue Universitaire, octobre 1892; Revue Pédagogique Belge, novembre 1893; Revue Encyclopédique, décembre 1891; La Russie; Statesman's Year-Book, 1894 and 1895; Almanac de Gotha, 1895.

Population and administration.—The Grand Duchy of Finland has an area of 144,255 square miles, with a population of 2,380,140 (in 1890). The capital, Helsingfors, has a population of 61,530. Finland is annexed to Russia, but not incorporated in it. Ceded to Russia by the treaty of Frederikshamn, Sweden, on September 17, 1809, it retains portions of its ancient constitution, which was originally adopted in 1772, remodeled in 1789, and modified in 1869 and 1882. There is a national diet, which discusses schemes of laws proposed by the Czar, who has also the right of veto. Proposed laws are elaborated by the "State's Secretariat" of Finland, which sits in St. Petersburg, and consists of the state secretary and four members nominated by the Crown (two of them being proposed by the Senate). The Senate, which sits at Helsingfors, is under the presidency of the governor-general, and is the superior administrative power in Finland. It consists of two departments, justice and finance, which have the administration of various divisions of the internal affairs of Finland. The military department is under charge of the Russian ministry of war. Foreign affairs are under the charge of the Russian chancellor.

THE SCHOOL SYSTEM AND STATISTICS.

The school system of Finland is distinct from that of Russia, and resembles in its main features that of Sweden, to which country it belonged until 1809. According to statements presented by the central bureau of statistics (Statistiska Centralbyrån) and by the higher school board (Öfverstyrelsen för Skolväsendet) in Helsingfors, which board centralizes the control of schools for Finland, the system consists of elementary (fasta folkskolor), secondary, and professional (elementarskolor and realskolor), normal schools (folkskollärare och lärarinneseminarier), higher and special schools. The system was

¹Prepared by Miss Frances Graham French, specialist in the school systems of northern and eastern Europe.

²Minister and state secretary for Finland, General Lieutenant von Daehn; superior director of schools, Dr. L. Lindelöf; director of central bureau of statistics, A. Boxström

established by decree of April 19, 1858, and definitely organized¹ by decree of May 11, 1866. This decree required each town to provide a sufficient number of schools for all children between 7 and 14 years of age, with a division into lower and higher elementary schools, the latter for youth between 10 and 14 years of age. At a later date the school age seems to have been extended to 16 years, and the statistics presented are from 7 to 16 years of age. In rural communes the earliest instruction is to be given in the family; if not there, attendance is required in either stationary (*fasta folkskolor*) or in ambulatory schools (*flyttande folkskolor*)—that is, schools whose teachers move from district to district every two or three months instructing the scattered school population. In 1891-92, according to the *Statistisk Årsbok för Finland*, there were 177,886 pupils in ambulatory schools, which gives a ratio of 7.47 to the 100 of population of 2,380,140; and 57,663 in stationary schools, or a ratio of 2.41 to the 100 of population. There were 1,628 teachers—men, 753; women, 875. Preceding the ele-

¹ The Rev. Uno Cygnaeus is generally conceded to be the reorganizer of the Finnish school system. Being commissioned by the authorities to visit different countries for the purpose of studying educational questions, he introduced new ideas, and prepared "a combination of literary, scientific, and industrial studies" for the schools. He filled the position of inspector-general of common schools during the period of reorganization. The general development of the school system prior to this reorganization is presented at the close of this chapter. Uno Cygnaeus, the patriot and the promoter of elementary education in Finland, was born October 12, 1810, in Tavastehus. Entering the university in his seventeenth year, he received his doctor's degree in 1836. Ordained as pastor at Viborg, he soon joined a colony of Finns in North America, and became their pastor at New Archangel (Sitka), in May, 1840. The first Finnish elementary school was started here. During the long voyage around Capo Horn, Cygnaeus gave much thought to the moral and intellectual education of man, and he determined to consecrate his life to the education of future generations. After staying five years in America, he went to St. Petersburg in 1846, remaining there until 1858 as a pastor for the Finnish people. About that date Alexander II, Emperor of Russia and Grand Duke of Finland, visited that island and announced in the Senate that he intended to give Finland a complete and modern school organization. According to the customs of the times, the matter was brought before the people, discussions of the subject being requested. Pastor Uno Cygnaeus, as author of *Thoughts on the Future of the Primary School of Finland*, was authorized by the Senate to present a study on the subject of education in other countries.

The principles announced in this work, "*Några ord om folk-skoleväsendet i Finland*," caused Cygnaeus to be appointed inspector in chief of elementary schools and director of the normal school at Jyväskylä, so that he was able to carry out his pedagogical views. According to the ideas of that period his modern pedagogical views seemed impracticable. He had learned to comprehend both Pestalozzi and Fröbel. He understood that elementary instruction was gradually being deflected from its essential goal; that is, its purpose should be to elucidate or to educate by degrees, each step gradually unfolding and leading to a new idea. Cygnaeus did not present new ideas, he simply revived the art of educating, and he applied this art to each and every institution in its turn. He soon saw that many educators did not comprehend the Pestalozzian spirit, nor had they been able to apply his ideas. Pestalozzi believed essentially in the common school for rich and poor, for the sons

mentary schools are infant schools (barnskolor), with 24,570 children in attendance. Grouped according to their several divisions, the numbers are as follows:

	Schools.			Teachers.			Pupils.			Graduates.
	Boys.	Girls.	Total.	Men.	Women.	Total.	Boys.	Girls.	Total.	
Rural elementary schools of higher grade.....	158	155	313	578	427	1,005	21,632	16,405	38,097	3,676
City elementary schools.....				175	448	623	9,638	9,611	19,249	1,337
Other elementary schools (of city) not given above.....							137	180	317	
Total.....							31,407	26,256	57,663	
Normal schools.....			4	31	14	45			436	82

a Mixed.

The budget for 1893 contained \$326,259 for elementary and normal schools, which gives a per capita of enrollment of \$5.65, and a per capita of population of 13 cents. It should, however, be observed that the income for school purposes is not limited to the governmental subsidies, for the communes aid in the matter of school maintenance. In 1891 the expenditures of the communes for rural schools was \$130,008. Assuming this amount to be for the ambulatory schools (177,886 pupils) and for the higher grade elementary pupils (38,097) of rural districts, then the per capita of enrollment would be 59 cents.

of a president and for those of the workingman—all should be equal and receive an equal education. Cygnaeus added to this that education should be based upon piety and morality, that these were more important than a variety of studies. He also insisted upon physical training; and for this and other reasons he insisted that sloyd should be given a principal place in the school course, and he was the first person in Finland to insist upon sloyd being a part of the course of study of elementary and normal schools. The education of women—the future mother—interested him greatly, and he introduced what were called rational methods of education. He suggested that crèches be established near the schools, and that girl pupils aid in caring for the little ones left there by their mothers during the day. In fact, Uno Cygnaeus created the elementary school of Finland, and, practical in his views, he perfected methods of education both for elementary schools and for the proper training of teachers in normal schools or teachers' seminaries. His writings on educational subjects are not numerous, but he conversed freely on that subject, and by correspondence, and especially by deeds, carried out his views. His power as an educator consisted in his thorough comprehension of the efforts of his predecessors in pedagogical fields, with the executive force to carry out such ideas. Religious in the best conception of the term, clear-headed, energetic, friendly in intercourse with others, he really created the school system of Finland, which, in its present flourishing condition, is a fitting memorial of his efforts to present and future generations. While developing his pedagogical ideas Uno Cygnaeus visited Denmark, Sweden, Germany, Switzerland, and the Netherlands; he became acquainted with well-known educators of those countries, and on his return to Finland he embodied in his plan such of their ideas as seemed feasible for the needs of the people of Finland. (Otto Salomon in *Mexico Intellectual*, July 31, 1894, pp. 46-50; and Uno Cygnaeus, by G. F. Lönnbeck.)

The secondary schools, as is also the case with the elementary grades, are subdivided into schools for the Swedish,¹ and schools for the Finnish school population. According to an enactment of 1872 the real schools, lyceums, and higher schools for women are classed under the heading "Elementarläroverken"; the real schools receive pupils from 9 to 12 years of age, and prepare them for special schools; the lyceums include the old gymnasia (the first founded in 1630) and lead in their eight-year courses directly to the university or to special schools.

Statistics of secondary schools for 1891-92. a

	Schools.			Teachers.			Pupils.		
	State.	Private.	Total.	State.	Private.	Total.	State.	Private.	Total.
Lyceums:									
Complete <i>b</i>	19	4	23	310	76	386	3,417	789	4,206
Incomplete <i>b</i>	3	5	8	29	89	118	286	720	1,006
Total.....	22	9	31	339	165	504	3,703	1,509	5,212
Swedish.....	8	7	15	142	135	277	1,297	1,257	2,554
Finnish.....	13	2	15	180	30	210	2,289	252	2,541
Swedish-Finnish.....	1	.....	1	17	.....	17	117	.....	117
Elementary and real schools:									
Complete.....	9	.....	9	72	.....	72	419	.....	419
Incomplete.....	11	2	13	.....	.....	59	.....	.....	264
Total.....	20	2	22	.....	.....	131	.....	.....	683
Swedish.....	9	2	11	.....	.....	65	.....	.....	332
Finnish.....	10	.....	10	.....	.....	61	.....	.....	339
Swedish-Finnish.....	1	.....	1	.....	.....	5	.....	.....	12
Secondary schools for girls and preparatory schools:									
Swedish.....	6	31	37	.....	.....	375	.....	.....	2,735
Finnish.....	6	17	23	.....	.....	215	.....	.....	1,913
Swedish-Finnish.....	.....	1	1	.....	.....	7	.....	.....	64
Total.....	12	40	61	150	438	597	1,587	3,125	4,712

a Statistisk Årsbok för Finland, 1894, and Statistisk Översigt af Elementarläroverkens tillstånd och Verksamhet, 1891-1894.

b The complete schools are those of 7 classes; the incomplete of 4 classes, which are in a measure preparatory to the seven-class lyceums.

c Including 708 boys.

The State and the communes cooperate in the maintenance of these secondary schools. The amount included in the budget in 1891-92 was \$408,591, which gives an expenditure of 17 cents per capita of population and \$38.52 per capita of enrollment. The university and polytechnic school (Universitet och Polyteknikum) had 1,881 students (1,750 in the former and 131 in the latter) in 1893. The State expenditure for both institutions was \$182,155.

¹ In order that there be no misapprehension of the terms Swedish and Finnish schools, it should be stated that 85 per cent of the inhabitants of Finland are Finns and 14 per cent Swedes. Each nationality has a certain proportion of schools, where the instruction is given in either the Swedish or Finnish tongues, and hence the term Swedish or Finnish schools; in still other schools both languages are used. These two peoples, 98.05 per cent of whom are Protestants, have lived together for seven hundred years and form a single nation. The Swedish, or more aristocratic element, is found in the greatest numbers in Åland, Wyland, Wasa, and a part of the Archipelago of Åbo.

In Finland stress is laid upon training for industrial, commercial, and agricultural pursuits. As is stated by the director of the central bureau of statistics, there are 7 industrial schools (*industriskolorna*), with 48 teachers and 333 pupils; 7 higher grade manual training schools in cities (*högre handtverksskolor i städerna*), with 38 teachers and 226 pupils; 31 of lower grade (*lägre handtverksskolor i städerna*), with 92 teachers and 1,096 pupils. State expenditure for manual training was \$5,005; communal expenditure for the same was \$8,264. Commercial schools (*handelsskolorna*) are 8 in number, with 70 teachers and 472 students and 179 graduates in 1892-93; State expenditure, \$10,402. In rural districts there are 14 agricultural schools (*landbruksläroverken*), with 52 teachers, 375 students, and 151 graduates; State expenditure, \$42,575; also 19 dairy-farm schools (*mejeriläroverken*), with 37 teachers and 175 women students; graduates, 95; State expenditure, \$10,537. For the purpose of teaching those who desire to enter the marine service there are 7 navigation schools (*navigations-skolorna*), with 146 students in 1892-93. The State expenditure was \$14,706. Under the heading of "*Abnormskolorna*" are grouped the 5 schools for deaf and dumb (*döfstumsskolor*), with 31 teachers and 283 pupils; State expenditure, \$21,127; the 2 schools for the blind (*blindanstalter*), with 17 teachers and 68 pupils; State expenditure, \$11,988; and the 2 private schools for idiots (*idiotanstalten*), which, however, received \$5,790 from the State; teachers, 9; pupils, 44.

The length of the school year in the different grades of school is not definitely stated, but in the elementary grades instruction must be given at least thirty hours a week for thirty weeks. Secondary schools are kept open from September 1 to December 20, and from January 14 to May 31; the university from September 15 to December 15, and from January 15 to May 15. The term of the remaining scholastic institutions is not specified.

STATE AND LOCAL SUPERVISION.

The central control of the school system at Helsingfors is vested in a higher school board (*Öfverstyrelsen för Skolväsendet*) which is an adjunct of the Imperial Senate of Finland, and especially connected with the administrative section of ecclesiastical affairs and public instruction. This central organization has supervision of State elementary, secondary, and special schools, and also of private schools which may be subsidized by the State; it regulates the school programmes and controls the apportionment of school material. An inspector in chief, appointed by the Czar, on the nomination of the board, attends more especially to the needs of elementary and normal schools; reports from the local inspectors are brought to his attention. The university is controlled by the academic authorities, but no modification of its organization may be attempted until the matter has been referred to the Senate and has finally received imperial sanction. In

each territorial subdivision (län) there is a local inspector of elementary schools who has general supervision of that grade throughout the län. The local supervision of secondary schools is intrusted to a council of state of 3 to 5 members appointed by the higher school board.

SCHOOL ORGANIZATION AND METHODS.

The teaching force is recruited from the graduates of normal schools, who, after passing the examination at the close of the four years' course, are entitled to a certificate of qualification to teach. The normal schools have kindergarten and infant schools connected with them; the fourth year of the course is generally devoted to practice teaching. The central school board appoints the teachers, and it is to the State that they look for payment of salary, although the local authorities provide lodgings, containing at least two rooms and a kitchen, with ground for gardening and pasturage for a cow. The salaries of elementary grade teachers range from \$116 for women to \$154 for men per annum; in real schools (in 1873) the salaries reported were from \$463 to \$579; in lyceums from \$540 to \$887; in secondary schools for girls from \$579 to \$772 for male teachers and \$307 to \$463 for women, lodgings being allowed in all cases. Whether these amounts have increased or decreased since that date is not known.

Organization and plans of study.—In Helsingfors, and also in some other cities, the school buildings are constructed according to modern methods, and are arranged with well-ventilated rooms, and have extensive grounds. The ambulatory schools, however, have to depend upon rooms in the homes of peasants or wherever they can best be accommodated. Instruction is insisted upon by the authorities, but there is latitude in regard to enforcement of school attendance. The Statistisk Årsbok för Finland indicates that in 1891, out of a school population of 470,382, there were 207,813 children receiving instruction at home or in schools held on Sunday, while only 21,523 were reported as having no schooling at all. The central or higher school board at Helsingfors regulates the school programmes from the pedagogical and technical side, but there is great liberty of action left to the teacher. The very latest improvements are investigated, and adopted when feasible. The elementary (primary) schools have a four years' course, divided into lower and higher grades of two years each, instruction being both oral and by text-books. The studies include religion, the mother tongue, arithmetic, drawing, singing, gymnastics, and manual training for boys and girls; in the higher grade, elementary history, geography, elements of plane and descriptive geometry, and natural sciences are added. Manual training occupies about five hours a week in each class. Corporal punishment is not allowed in the schools; the teacher places the pupils upon their honor to obey the rules. Formerly boys and girls were taught separately, but since 1883 coeducation has been attempted in some schools of both elementary and secondary

grades, and it is stated that 5 coeducational¹ institutions (4 Swedish and 1 Finnish) have been created since that date. Institutions whose course of study is of an elementary character include also manual training schools, city evening schools (with 773 pupils in 1891-92), and schools for the defective classes.

The secondary schools form three groups, as heretofore stated. The studies, which vary somewhat according to the group, include religion, Swedish, Finnish, Russian, German, French, and English, the classics, history, geography, botany, zoology, physics, mathematics, drawing, singing, and gymnastics. Large halls for gymnastic exercises are connected with the better class of buildings.

Four normal schools prepare those desiring to fill a teacher's position. Two of the normals are mixed schools—that is, both sexes follow the courses—three are for the Finnish population, and one for the Swedes; pupils under instruction, 436.

Training for practical life.—The comparative prosperity of the people of Finland may be said to be due in part to the fact that the benefits of education have been brought within the reach of even the humblest citizen. Then, too, an impetus has been given to agricultural pursuits by the foundation of schools of higher and lower grade for the study of agriculture, dairying, and forestry. Numerous agencies, societies, and individuals aid in the improvement of the poorer classes by the establishment of household schools, where girls are taught the main elements of domestic economy. Commercial schools (*handelsskolor*) train those whose aim is toward a business life. Prizes are offered to stimulate the peasant class in developing the best methods of carrying on agricultural pursuits. Agricultural societies have ramifications all over the country and enroll hundreds of active members. Trade

¹"Of these private coeducational schools, one at Helsingfors," says a writer in the *Journal of Education*, London, "had 200 boys and girls in 1893 who were receiving similar instruction. There were 11 classes, 2 of them elementary for the younger children, who are received from the sixth year on. They may remain until the twentieth year, and if the examination is a satisfactory one they may enter the university. The course of study includes English, French, German, Finnish (optional), Russian, and Latin. Geography is taught from the fourth year of the course. Manual training is taught to both sexes, and this includes sloyd, sewing, embroidery, and knitting. Drawing is an optional branch, while all study singing, unless prohibited by physicians' orders, or because they have no voice for singing. Gymnastics is taught two or three hours each week; in the lower classes the boys and girls are trained together; in the upper classes separately. The school year commences in September; there is a month's vacation at Christmas, a week at Easter, and several days at Whitsuntide; and the longest vacation is from June to September. Each day's schooling is from 8 to 11, and from 1 to 3 o'clock. Every hour there is ten minutes' recreation, and every half hour four minutes' change of occupation. During the summer months botanic studies are pursued, and each pupil has his (or her) herbarium, and classifies and describes the new plants placed therein. Each pupil pays \$50 a year, and the Government is called upon for a subsidy, if required, although it is stated that the Government does not desire to subsidize coeducational institutions."

schools are established, and there are ambulatory instructors who travel from point to point and instruct in carpentering, smithcraft, fish curing, and horticulture. General training for life work does not stop here, for there are schools of horticulture, farriers' schools, agriculturo-chemical and seed stations, stock farms for cattle breeding, and divers other means of improving the people. By means of these aids to a general education profitable occupations are given to those remote from urban centers, so that during the long nights of the northern winter the peasantry retain their interest in some one or more avocations, and with the return of the spring comes the incitement to new endeavor. Statistics of these and other special schools have already been given, as far as obtainable, and the Government's interest is indicated by subsidies.

UNIVERSITY AND POLYTECHNICUM—HOW ORGANIZED.

The university at Helsingfors, originally established at Åbo and removed to Helsingfors in 1827, has a consistorium, composed of the rector and regular professors, which attends to the management of its internal affairs. By decree of 1852 the government of the institution rests with the chancellor and the consistorium, but any modification of its organization must be referred to the Senate and then receive imperial sanction before its provisos can be carried out. The four faculties are of theology, law, medicine, and philosophy, entrance to either of which requires the passing of the final examination in a lyceum, and an examination conducted by professors designated by the academic authorities.

The university has also the subdivision into six "nations,"¹ each of which indicates from what part of the duchy the student comes. Each of these bodies has an inspector at its head, and its members are taxed for special and general purposes. The disciplinary power of the "nation" is such that a refractory member may be suspended for not more than a two years' period. To obtain a professorship in a given faculty requires the holding of the degree of doctor of that faculty, and the presentation of a thesis on the subject to be taught. A doctor's degree necessitates, first, that of M. A., and the passing of a second examination. Candidates for the position of private docent or instructor, are also required to hold satisfactory credentials.

¹ *Revue Universitaire*, 15 octobre 1892; article par R. Candiani; also *Barnard's Journal of Education*, v. 24.

Statistics for 1893.a

	Professors.		Students by "nation."								Total stu- dents.	Graduates.
	Regular.	Vacancies.	Nylandska.	Savolaks- Karlska.	Tavast- landska.	Vestfinska.	Viborgska.	Österbott- niska.	Women. <i>b</i>			
Theology	5	2	7	30	51	63	14	38	.....	203	15
Law	6	1	127	80	65	104	50	80	3	509	50	
Medicine	22	2	43	29	21	43	8	36	4	181	113	
Philosophy:												
Historico-philological	40	3	67	71	65	92	28	83	25	431	109	
Physico-mathematical	21	.....	91	65	46	82	37	78	21	423	56
Total	91	8	335	275	248	384	137	315	50	1,750	343	
Of the graduates .....	.....	.....	80	47	40	75	30	65	6	343	.....

a Statistisk Årsbok för Finland, 1894.

b In 1893-94 21 young ladies in Helsingfors passed the "abiturienten examen," 2 that for candidate of philosophy, 2 for the "kameral examen," and 2 the preliminaries for entrance to the medical faculty. One lady has become an assistant in the students' library.

The semesters in the university are from September 15 to December 15, and from January 15 to May 15. Connected with the university are laboratories, chemical, pharmaceutical, and physiological; museums, a fine library of 200,000 volumes, and anatomical and pathological institutes.

The Polytekniska Institut i Helsingfors, which some of the university students enter, has a four years' course of study. Its mathematical course includes algebra, analytical, practical, projective, and descriptive geometry, trigonometry, and differential calculus; its architectural course covers freehand and linear drawing, perspective, ornamentation, landscape drawing, modeling; its chemical division takes up organic, inorganic, analytical, and theoretical work in the chemical laboratory, and chemical and mechanical technology; its language course includes Swedish, Finnish, Russian, German, English, and French, national economy, art history, agronomy, mechanics, geography, metallurgy, statistics, cinematics, gymnastics, singing, and bookkeeping—all appear in the programme of study for the year 1891-92. Its library contains 2,500 books and 2,000 periodicals.

Statistics for 1892-93.a

Courses.	Professors.	Students.							Graduates.
		Total.	Finnish.	Swedish.	From the university.	From lyceums.	From real schools.	Men.	
Section in engineering	31	26	10	16	21	5	.....	26	1
Section in machine construction		29	7	22	20	5	4	29	4
Section for architects		20	3	17	12	4	4	19	1
Section for "Kemisk" technology <i>b</i>		27	3	24	17	9	1	25	3
Section for land surveying		29	15	14	17	6	6	19	13
Total	31	131	38	93	87	20	15	128	22

a Polytekniska Institutet i Finland, 1892-93.

b To have knowledge of chemistry in all its forms, and as applied to building materials used in construction.

HISTORICAL RÉSUMÉ.¹

In Finland, to date of 1611, the church authorities controlled educational institutions, the few schools being annexed to Catholic monasteries. The Lutheran Church neglected to do anything for public instruction until the reign of Gustavus Adolphus (1611-1632); but special activity is noticed during Queen Christina's reign (1632-1654), and the university was organized in 1640.

In 1686 an edict of Charles XI required the clergy to hold an annual examination to ascertain whether children could read, and whether they knew their catechism; it prohibited the marriage of parties who failed in the above and who had not been confirmed.

A law of 1649, amended in 1724, regulated public instruction for a considerable period. Latin was the principal subject of study at that date, and the language most generally used.

The schools were generally controlled by the clergy, and consequently varied in organization, in accordance with the wishes of the bishops in different dioceses. Elementary instruction was left almost entirely to the families, but the Lutheran Church exercised control even over this instruction. In 1792-1809 the university, in point of instruction and professors, reached a degree of excellence which it has hardly surpassed since.

During the wars which brought about the annexation, in 1809, of Finland to Russia as a grand duchy, the attention of the people was diverted from any attempts at special educational progress, but in 1812 three navigation schools were established, and from 1825 to 1855 public instruction developed materially while general conditions greatly improved. In 1837 agricultural institutes were first referred to; in 1843 a new school law, tending toward specialization in study, was promulgated; in 1847 the polytechnic school was established.

In 1858 the subject of elementary education was agitated; rural communes were required to establish stationary schools and governmental aid was promised. The school organization was not definitely regulated, however, until eight years later. From 1858 on the first measures to extend the use of the Finnish language were adopted, Swedish having been the only language for general use permitted by law of 1843. A Finnish school and a school for deaf and dumb were established in 1858. In 1863 the first association of teachers was formed, and a normal school was created in 1863-64.

The beginning of a withdrawal of all schools from ecclesiastical authority dates from 1865, and this change from clerical to lay authority culminated in 1869, when the higher council of education was created at Helsingfors.

In 1866 the school system was definitely organized, and governmental subsidies were to be withheld if its provisions were not carried out by

¹The main facts of this résumé are taken from an article by R. Candiani in the *Revue Universitaire*, October, 1892. He quotes from material furnished by the rector of the university.

the local authorities. In 1871-1880 several normal schools were created for one or the other sex.

In 1872 the real schools, lyceums, and high grade schools for women were classified under the term "elementar-läroverken," the object being to continue elementary education and to prepare for special schools. Among the private lyceums are five where boys and girls receive instruction in common preparatory to university studies.

In 1888 Parliament decreed the establishment of lyceums for girls to prepare them for university courses, and by reason of this and other legislative measures the social and political status of women has been greatly benefited during the last few years. Woman may now fill a number of positions in administrative offices, and, although she is not considered eligible as a voter, she has acquired the right of voting in the commune. Much of this progress is attributed to the efforts of the Woman's Society of Finland, established in 1884.

Another element of progress within the last quarter of a century is the gradual equalization of the use of Finnish and Swedish languages. In 1858 there was only 1 Finnish school of a secondary grade; in 1891-92 the number of schools in which Finnish is the language of instruction included 13 lyceums, 10 real schools, and 6 secondary schools for girls; of elementary schools the number is not stated. At the present date there are 58 Finnish journals and reviews (12 more than in Swedish), and the Finnish and Swedish languages are equally used in all administrative and educational offices. So that it may be seen that the struggle between the "Svécomanes" and "Fennomanes" is diminishing by degrees.

In the matter of manual and physical training and in that of the construction of a superior class of school buildings, arranged according to the most approved hygienic methods, the inhabitants of Finland take an excellent position. Gymnastics is obligatory for both sexes in institutions of all grades, and the youth of secondary and higher grade schools are encouraged to learn to swim, to ride horseback, to skate, to ride bicycles, to row, and to manage sailboats, etc., and they are encouraged to take part in competitive athletic sports.

Helsingfors is the center of scientific, literary, and artistic effort, while other cities also have many courses and conferences tending toward the instruction and material benefit of the public.

Temperance¹ associations are organized, and many pamphlets deal-

¹A lady of Finland, Fröken Alli Trygg, has, since 1888, established a workingmen's home and a people's kitchen, so as to do her part toward the elevation of her fellowmen. Living in a suburb of Helsingfors, largely inhabited by men of that class, her endeavor has been in the People's Kitchen to furnish the men with healthful, nourishing food, and through the invention of a new fermented beverage, with almost no alcohol in it, she hopes to keep them from drinking beer and brandy. Her appeal to the Finnish Senate brought her a grant of 60,000 marks (\$11,580) for the Workingmen's Home. A kindergarten and nursery are found in the home; there is a hall for gymnastics and music, a loan library, a free reading hall with papers and periodicals, a larger hall for lectures on Sundays and evenings when the men are at liberty. Fröken Trygg resides in this institution and devotes herself to its welfare.

ing with this and other subjects are annually distributed, the object being to discuss questions which will lead to the general advancement of the people both in urban and rural districts.

It is well said that the people of Finland "have a great desire for culture" and that their intellectual and industrial progress is such as to awaken the interest of individuals of larger and more favored nations, speaking from the geographical and historical standpoints.

PUBLICATIONS, 1890-1893.

A list of volumes published within the last few years in Finland bearing upon the subject of education, or dealing with the history of the country is here appended. The list includes such volumes as are filed in the library of the Bureau of Education:

- Blomqvist, Anna. *Elementärisångöfningar för Skolor.* (Text-book for singing.) 12°. Helsingfors, 1890.
- Blomqvist, Anna. *Förberedande Kurs i Tyska Språket.* (German text-book.) 12°. Helsingfors, 1890.
- Brahestads Borgare-och Handelsskola. *Årsberättelse, 1891-92, 1892-93.* (Report of commercial school.) 8°. Uleåborg, 1892, 1893.
- Kejsarliga Alexanders Universitet i Finland. *Katalog för Vårterminen, 1893.* (Catalogue of the university.) 8°. Helsingfors, 1893.
- Normal-lyceum i Helsingfors. *Berättelse, 1890-91.* (Report of lyceum in Helsingfors.) 8°. Helsingfors, 1893.
- Polytekniska Institutet i Finland. *Berättelse, 1890-91, 1891-92, 1892-93.* (Reports of polytechnicum.) 8°. Helsingfors, 1891-1893.
- Lönnbeck, Gustaf P. *Uno Cygnæus; Finska folkskolans fader.* (Account of Cygnæus' life.) 12°. Helsingfors, 1890.
- Mellberg, E. J. *Iagttagelser rörande Färgblindhet.* (Concerning color-blindness.) 8°. Helsingfors, 1892.
- Nya Svenska Samskolan i Helsingfors. *Redogörelse, 1891-92.* (Report of Swedish-coeducational school.) 8°. Helsingfors, 1892.
- Svenska Fruntimmers skolan och Fortbildningsläroverket. *Program, 1891-92, 1892-93.* (Report of higher school for women.) 12°. Helsingfors, 1892, 1893.
- Statistisk öfversigt af Barnundervisningen uti evangelisk-lutherska och grekisk-ryska församlingarna i Finland år 1891. (Children taught by Greco-Russian or Lutheran Assoc.) 8°. Helsingfors, 1893.
- Statistisk öfversigt af elementarläroverkens tillstånd och verksamhet 1891-92, 1892-93. (Report of secondary schools.) 8°. Helsingfors, 1894.
- Statistisk öfversigt af folkskoleväsendet 1890-91, 1891-92. (Reports of primary schools.) 8°. Helsingfors, 1894.
- Statistisk Årsbok för Finland, 1890-1893. (Statistics, including those on education.) 12°. Helsingfors, 1890-1894.
- Danielson, Joh. Rich. *Finland's Vereinigung mit dem russischen Reiche.* (Contribution to the history of Finland.) 8°. Helsingfors, 1891.
- Finska Vetenskaps-Societeten. *Bidrag till Kännedom af Finland Natur och Folk, 1890-1892.* (Contributions of the Scientific Society concerning Finland and the Fins.) 8°. Helsingfors, 1890-1892.
- Finska Vetenskaps-Societeten. *Förhandlingar, 1890-91, 1891-92, 1892-93.* (Proceedings of the Scientific Society.) 8°. Helsingfors, 1890-1893.
- Geografiska Föreningens Tidskrift. *Årgången, 1890, 1891, 1892.* (Journal of the Geographical Society.) 8°. Helsingfors, 1890-1892.
- Sällskapet för Finlands Geografi. *Fennia 6-8.* (Geodetic and geographical studies.) 8°. Helsingfors, 1891-1893.
- Vetenskapliga meddelanden af Geografiska Föreningen i Finland, 1892-93. (Scientific proceedings of Geographical Society.) 8°. Helsingfors, 1893.

CHAPTER X.

THE PSYCHOLOGICAL REVIVAL.¹

[For previous article on the subject see chapter on Child Study, Report 1892-93, vol. 1, pp. 357-391.]

TOPICAL OUTLINE.—*Chief events in the movement during the year 1893-94; societies formed; periodicals issued—Interdependence of the different methods of investigation—University equipment for psycho-physics and courses in child study—Results of the new psychology applicable to education—Addresses and citations from reports, articles, etc.*

Among the intellectual movements of the time none has greater importance for education than the revival of interest in psychology. During the year under review the agencies concerned in this movement have been increased by the formation of the American Psychological Association and the publication of the *Psychological Review*, whose first issue bears date January, 1894. Edited by Profs. J. Mark Baldwin, of Princeton University, and J. McKeen Cattell, of Columbia College, with the cooperation of a large body of distinguished specialists, the comprehensive and scholarly character of this periodical is assured.

The interest aroused and maintained by specialists in the leading universities has naturally extended to the great body of teachers, many of whom have pursued courses of psychology in the universities, and a still larger number similar courses in normal schools. As in the case of other movements affecting education, the strength of this, which had been silently developing for some time, was first signally manifested at Chicago. None of the department congresses held during the memorable summer of 1893 had larger or more enthusiastic audiences than the psychological. As regards numbers, at least, this was particularly true of the department congress of experimental psychology in education under the presidency of Dr. G. Stanley Hall. As to Dr. Hall, more than to anyone else, is due the credit of having aroused teachers to a sense of the value of this subject as a part of their professional equipment, it is natural that they should follow particularly the directions in which he has led. In one of these directions, namely, the systematic observation of children, the cooperation of teachers is

¹ Prepared by A. Tolman Smith.

helpful; indeed it may be said indispensable. By his efforts to secure this community of work, Dr. Hall has called into existence a national association for child study; this in turn has given rise to local or State societies, by means of which exact direction may be given to the work of individual observers or groups of observers.

In New York a division of child study has been created in the department of public instruction under the direction of Prof. Charles H. Thurber, A. M., of Colgate University. Blank forms are issued to teachers by the use of which systematic records may be kept of their observations upon children. Bulletins are also issued containing general directions and useful hints for the work, with accounts of individual studies, bibliographies, etc.

The Iowa society for child study was formed at the meeting of the State teachers' association held in Des Moines, December, 1894.

An account of the initial meeting of this society will be found among the papers appended.

The Illinois society for child study, formed this year (1894), has had phenomenal growth. Comprising as it does teachers, parents, kindergartners, physicians, specialists in neurology, psychology, and physiology, the society typifies the reciprocal relations of all those whose work concerns the welfare of children.

The Child Study Monthly, the first number of which has just appeared (May, 1895), will undoubtedly prove a valuable auxiliary to the work. It is edited by Dr. W. O. Krohn, assistant professor of psychology in the Illinois University.

Dr. Hall, whose interest in the subject never flags, has added to the many helpful suggestions for teachers and parents previously issued a series of syllabi for child study. These cover fifteen topics, including emotions, as anger, love of animals; emotional expression, crying, laughing, habits, experiences, etc. It is interesting to note in this connection that Dr. James Sully, of London, following the American precedent, asks the cooperation of parents and teachers in collecting facts that bear on the characteristics of the childish mind. What he especially desires is first-hand observations carried out on children during the first five or six years of life. The points to which observation is particularly directed are grouped under specific heads, as fancy, self-feeling, etc.

There are certain evils incident to an exaggerated interest in child psychology that have not escaped the attention of leaders of this movement. Childhood is but a fragment of a great whole; considered by itself, the incidental and unimportant may be unduly exaggerated, moreover adult life alone furnishes the interpretation of many phenomena of the developing mind. It is to be remembered, also, that the value of observation depends largely upon certain qualities in the observer that mark the specialist. These are not characteristic of the great body of teachers, and in so far as close observation tends to

the suppression of the personal element or "equation," to speak technically, it is not desirable that they should be. Free, spontaneous action of thought and feeling is a power in human intercourse and of great consequence when the purpose of the intercourse is the stimulation of thought and feeling. The observing attitude and the stimulating activity of mind are in a measure opposed to each other. It should be considered, also, that many of the investigations in progress require for their best results the use of instruments of precision; in other words, they belong to the laboratory. These considerations indicate the ultimate unity of all psychological study, whether its method be that of observation, of laboratory research, or of introspection. Only when the various results are correlated can their true value be determined. This idea of unity is emphasized by Dr. Alexander Bain in a discussion of the respective spheres and mutual helps of introspection and psycho-physical experiments in psychology. (*Mind*, January, 1893, 42-53.)

In the introduction he says:

The resources at our disposal in imparting to psychology a scientific character are now numerous. At the head must still remain introspection, or the self-consciousness of each individual working apart. This is the method principally employed since the first beginnings of the science in Greek philosophy. It does not exclude and never has excluded (as we see in Aristotle) references to objective facts and appearances, deriving from thence a great addition both of insight and of certainty.

In the enumeration of means now available for the study are included observations (and experiments) directed upon infants, upon abnormal and exceptional minds, upon animals, and upon the workings of society, or collective humanity. To these are added physiology, and, last but not least, psycho-physical experiments.

He concludes as follows:

By the nature of the case the initiative, in the more fruitful lines of inquiry, will be most frequently taken by introspection, which also, by its powers of analysis, will still open the path to the highest generalities of our science.

The mutual dependence of laboratory work and schoolroom observation is dwelt upon by Prof. W. L. Bryan, of the University of Indiana, in an article on "Child study, systematic and unsystematic," citations from which are given among the papers appended.

The most important contributions that the "new psychology" has made to our knowledge of mental phenomena have come from laboratory investigation into the structure and functionings of the nervous system. For this work our country has unsurpassed facilities, a feature which is dwelt upon in all foreign accounts of our university equipment. In many of the leading universities systematic studies in child life are also carried on *pari passu* with the laboratory work. The reputation of the professors who lead in this matter, not less than the appliances which are at their disposal, augurs well for the outcome. Particular instances will serve better than general statements to show the plane upon which this department of study is placed. For example,

at Columbia College Prof. J. M. Cattell conducts the department of experimental psychology. The catalogue for 1894-95 gives the following particulars as to the laboratory equipment:

The psychological laboratory is situated on the fourth floor of the building known as the president's house, and consists of a lecture room and general laboratory, and three smaller rooms for special research, including a dark room for work on vision. The small rooms allow students to work alone and without interruption at all hours during the day. The laboratory has windows to the north, east, south, and west, and is supplied with electric light for experimental purposes and electric power.

The collection of psychological apparatus is, perhaps, not surpassed by any in this country or in Europe. Three thousand five hundred dollars have recently been appropriated for this collection by the trustees of the college, and, in addition, apparatus which cost \$1,200 is in use. The apparatus has been secured with a view to a series of experiments such as is carried out by the students attending the introductory course, and with a view to special researches.

The exceptionally fine collection of apparatus belonging to the department of physiology is also available for the use of students in this department.

Students of education have opportunity for the personal observation of children in the Horace Mann School, maintained by the Teachers' College as a model practice school.

At Clark University the president, Dr. G. Stanley Hall, is also professor of psychology. He is ably seconded by the assistant professor, Dr. E. C. Sanford, and by the professor of physiology and neurology, Dr. C. F. Hodge. The fellowships in psychology bring to their aid a company of trained specialists. The course in education is kept in close relation with that in psychology and anthropology, and in part is based on them. It need hardly be added that child study is a prominent feature of this course.

At Yale University the subject of physiological and experimental psychology is in charge of Dr. E. W. Scripture. The course, which is very elaborate, includes on the educational side "Child study on a scientific basis." The similar department at Harvard is under the conduct of Dr. Hugo Münsterberg. The course in experimental psychology at the University of Pennsylvania, in charge of Prof. L. Witmer, includes—

	Hours per week.
1. Systematic course in experimental psychology.....	1½
2. Special topics for class experimentation.....	1½
3. Seminary for the study of child psychology.....	1½
4. Individual laboratory work, at least.....	2

At Princeton the course of mental philosophy includes experimental psychology. The laboratory for this class of investigations, founded at the beginning of the academic year 1893-94, is equipped "with the standard pieces of apparatus for demonstration and research, together with illustrative models and charts." The work is in charge of Dr. J. Mark Baldwin, whose contributions to the literature of psychology are well known.

The foundation of the Susan Linn Sage School of Philosophy secured to Cornell University ample facilities for psychological research. In

the instruction of this department all sides of philosophy are represented. Furthermore, as stated in the announcement of the school,

Every method of discovering truth—observation, experiment, historical investigation, reflection, and speculation—is welcomed within its appropriate domain.

The apparatus for the psychological laboratory was made in Germany under the personal supervision of the professor. There is already a full equipment in some of the most important lines, and additions will be continually made as required. All the philosophical journals published both at home and abroad are taken. The library is also well supplied with philosophical works, and books not on hand are ordered as soon as called for. In the new library building there is a large seminary room set apart for the exclusive use of advanced students in philosophy. This room contains complete sets of the more important philosophical journals—American, English, French, and German—and a carefully selected collection (which is being constantly enlarged) of books necessary for special study and independent research. Another room in the library building has been assigned to the school as an editorial room for *The Philosophical Review*. This Review marks another function of the school, namely, the publishing of the results of investigation. It appears once in two months, each number containing from 112 to 128 pages. A large part of the material of the Review is contributed by the professors, fellows, and graduates in the Sage School of Philosophy.

Dr. E. B. Titchener is professor of psychology, with direction of the laboratory.

The principal universities of the Western States are fully in line with this movement. At Michigan University, psychology, under Professor Mead, is kept in close relations with philosophy, under Dr. John Dewey.¹ At Illinois University elaborate courses in psychology are conducted by Prof. W. O. Krohn, Ph. D.; at Wisconsin University by Dr. Joseph Jastrow, whose researches have thrown great light upon the whole province of child study and of race psychology.

At the Indiana University Dr. W. L. Bryan, professor of philosophy, maintains also courses in psychology. The laboratory for experimental psychology, established in 1888, has recently been enlarged and supplied with new apparatus. Educational psychology forms a special feature of the department of pedagogics.

At the University of California a graduate seminary for the systematic study of child life is maintained in the department of pedagogy, under the immediate charge of Dr. E. E. Brown. Professor Bailey also lectures on the biological aspects of education.

The more recent foundations—i. e., University of Chicago and Leland Stanford Junior University—have also made large provision for psychology, both rational and experimental. At the latter institution a vigorous work in child study and anthropological psychology is maintained under the conduct of Prof. Earl Barnes.

In the colleges exclusively for women similar courses are offered. At Wellesley general and advanced courses are maintained by Dr. Miles and Prof. Mary W. Calkins. At Bryn Mawr psychology is coor-

¹ Dr. John Dewey having accepted a call to Chicago University, his relation with Michigan University ceased with the close of the scholastic year 1893-94.

minated with logic and philosophy under the direction of Dr. D. S. Miller. All the main divisions of psychology are treated "by lectures, illustrative demonstrations, reports of abnormal cases, and discussion." Randolph-Macon Woman's College announces courses of psychology, theoretical and experimental, in connection with pedagogy. The classification and scope of these university courses is very clearly set forth in a recent article by Dr. G. Stanley Hall, citations from which will be found among the appended papers.

Not the least important outcome of the present interest in psychology is the relation it has established between university professors, teachers of secondary and elementary schools, and school officials. Teachers and supervisors are not likely to lose sight of the practical bearings of the subject upon their professional work. On the other hand, university men will naturally keep in mind the wider relations of the subject. This relativeness is incidentally suggested in many of the inquiry schemes and study directions issued for the work, the bearing given being generally scientific rather than philosophical. Thus a scheme for the study of temperament gives hints of the theory current among anthropologists that the key to racial vigor is to be found in the skull formations (long heads versus broad heads). Some understanding of this theory,¹ of the arguments for and against it, would be helpful, if not indispensable, in the mere act of recording data. Thus the natural outcome of the teacher's interest in a specific line of observation would be a wider range of reading and clearer understanding of his own particular field of inquiry. It is noticeable that in university circles the new psychology is kept in close relation with the old; investigation into the effects of mental phenomena as manifested in the action of muscles and nerves redoubles interest in the introspective view. As a natural result the past few years have seen notable contributions to the literature of rational psychology.

The educational bearing of psychology has long been a fruitful subject of study in normal schools and in the pedagogical department of universities. The question now arises as to what practical results, what guiding principles applicable to school work have arisen from the new psychology. These questions are discussed directly or indirectly in the papers on this division of the subject appended. It may be well to note here a few principles that are distinctly recognized by those who lead in the matter.

Dr. Hall has repeatedly called attention to the periods of physical growth and their relation to mental growth or activity.

It has been found that children grow tall in spring and stocky in fall; further, that different parts of the body have different periods of best growth. Times of physical growth are also times of mental growth in acquisition, though children then are not able to systematize well. Hence, in time of great acquisition ease up the constraint of methods.

¹For a valuable discussion of the pros and cons of the theory referred to see *La Psychologie des Peuples et L'Anthropologie*, by Alfred Fouillée. *Revue des Deux Mondes*, March 15, 1895, pp. 365-396.

Dr. Hall warns us also against applying the methods suggested by the study of defective or abnormal children to the instruction of the average child. He would rather "let the bright children set the pace." He adds:

An experiment was made a few years ago in Paris which showed that methods adapted for bright children enabled a class of average boys to complete the six years, course of the lyc  e in a little over two and one-half years, although no extra time was given. By such means I am confident we can work twice as fast with the brighter half of our classes. This is not theory; I have tried it.

Dr. Hall, Dr. Burnham, of Clark University, and other investigators in this province lay stress on three principles derived from the observation of the formative development of the body. Says Dr. Burnham:

The first pedagogical principle settled beyond controversy by this broad study of children is that no development is possible without the functioning of the nervous system. * * * It follows that the laws which express the development and activity of the nervous mechanism must determine pedagogical principles.

Among these laws one of prime importance is the following: The fundamental is developed before the accessory. * * * This law of the child's nervous system is the basis of a most important educational principle. First the fundamental, then the accessory. This applies not only to the various forms of motor training, manual training, gymnastics, and the like, but, in general, first a strong healthy development of the fundamental nervous processes is necessary, then may follow more delicate and complex acquisitions. A reversal of this order, the imposition of delicate, subtle, and complex occupations in the kindergarten or primary schools, may please parents and committees, but it is contrary to a law written in the child's nerve centers.

Again, all parts of the body do not develop at the same time. Each organ has its peculiar nascent period. Moreover there is a close relation between the function of any organ and its development, and the highest degree of skill in the use of an organ can often be acquired only during the period of growth.

The acquisition of language, for example, is probably a case in point. If, during the period the vocal organs and the corresponding nerve centers in the brain are developing, attention is given to educating some other part which is not ready for training, twofold loss is likely to be the result—waste of energy or injury in case of the latter, loss of opportunity in case of the former. So, too, if manual training be neglected in early life, during the nascent period of the motor centers, great skill can seldom be attained afterwards.

Corresponding to the nascent periods of the motor organs are the periods of interest in the child's mental growth. This year your boy has the collecting mania; next year it will be baseball or the secret language; a third year it will be the debating society, or he may be hunting and stuffing birds and snakes. These interests are sacred. Some of them should be turned into new channels, others should be made permanent as a part of character. But in all cases the time of interest is the time of opportunity, and here opportunity seldom comes twice. Special studies have shown the sequence of children's interests.

The importance of a due understanding of the symptoms and effects of fatigue is generally recognized. Dr. W. O. Krohn states the matter concisely as follows:

Some of us know, and every teacher should know, that the degree of fatigue varies with the condition of mind and body. Thus the child tires sooner when the work is distasteful or when the organs are unhealthy or when poorly nourished, and the body seems wearied quicker when the mind is tired and the mind more quickly

when the body is tired. The child tires more easily at one season than at another. The condition of the atmosphere, the weather, the time of day, all these affect normal power of endurance. Also rapid growth diminishes one's power of endurance. The child that has grown up quickly tires easily. Fatigue causes the child's mind to be less sensitive to interest or novelty. Also one order of studies fatigues the child more than another order of studies would.

It is obvious that whatever modifications are justified by the discoveries of the new psychology, they should not be left to hazard nor to the isolated action of individuals. The principles so far deduced have to do with pathology and neurology rather than with mental conditions in themselves considered; hence these principles reenforce the demand for the medical inspection of schools and school children. It is significant that this is exactly the result attained in Boston through the efforts of Dr. E. M. Hartwell, director of psychical training. Dr. Hartwell has approached the subject from the physiological standpoint, but with due appreciation of the psychical standpoint. In support of this statement, it is enough to refer to his discussions of the interrelation of mental, moral, and physical training in his report to the Boston school board for 1894. The report is a notable contribution to the vital statistics of the country, embodying the results of the most careful study that has yet been made as to the bearings of school life upon the health of school children. The extracts from this report included among the papers appended reiterate in an effective manner the very conclusions reached by specialists in psycho-physics.

Looking back over the history of the psychological awakening, it is perhaps no exaggeration to say that next to the initial impulse the most important incident of the movement is the recent return to the idea of unity.

The tendency in this direction is illustrated in the exercises at the annual meeting of the Massachusetts Schoolmasters' Club, the report of which is received just as this survey goes to press. The theme treated was psychology, and representative men had been invited to present their views on the relations of the old to the new psychology.

Dr. Larkin Dunton, of the Boston Normal School, presented briefly the conception of mind and of its operations with which the students of the old psychology are familiar and emphasized particularly their applications to the teacher's work. The addresses of Dr. Harris and Dr. Münsterberg which are given here in full covered the double aspect of the subject. Unfortunately Dr. Hall's contribution to the discussion was not reduced to writing and hence was only preserved in a very fragmentary form.

THE OLD PSYCHOLOGY v. THE NEW.

By W. T. HARRIS, LL. D., United States Commissioner of Education.

[Delivered at the Massachusetts Schoolmasters' Club, April 25, 1895.]

I understand it to be the intention of those who proposed this question for discussion to include under the term "new psychology" only two classes of investigation, namely, what is known as "physiological psychology," dating from the discovery of Broca in 1861, and what is known as "child study," including the researches of Professor Preyer and of Dr. Stanley Hall, their coworkers and disciples.

All other studies of mind, from ancient times to the present time, whether based on induction or deduction, whether *a priori*, as rational psychology, or *a posteriori*, as empirical psychology, should be called the "old psychology." It seems to me that both of those psychologies are of immense importance; that neither is a substitute for the other or to be neglected by the teacher who wishes to know scientifically the mind that he is supposed to educate. For I must hold that there is a constitution of the mind common to all rational beings—a rational nature which may be discovered by introspection and distinguished from the transient and variable characteristics which are determined in large manner by environment and conditions of development.

I would name as by far the most important knowledge from this source the distinction of the soul into several stages, as that manifested in plant life, called by Aristotle the nutritive or vegetable soul; the soul as active in sensation and locomotion, or the animal soul; the rational soul manifested in imagination, memory, reflection, and in pure thought. The distinctions of active and passive reason made by Aristotle in his famous treatises on the soul, and so often rediscovered or verified by profound thinkers in the history of philosophy, is the principle of this classification of soul-activities. On it is founded the philosophical doctrine of the immortality of the soul. In fact, not only the doctrine of immortality, but also the doctrines of theism and the freedom of the will are based on this rock of the old psychology, developed by Aristotle out of the hints of Plato or Socrates. God, freedom, and immortality are the three good gifts of philosophy, according to Novalis. They are all derived from the insight that finds in pure thought the independent self-activity of the soul and sees in it the only possible type of being for a first principle of the world—a Creator. The idea of self-activity is, moreover, the basal idea of free will.

The very concept of will is impossible on the basis of empirical thinking. For the understanding, as Coleridge defined it, deals with relations between objects, and finds causal relation everywhere, but not self-activity or will. It tries to explain each thing through its environment, and it never rests until it has traced the phenomena of an object to a ground in something else outside.

That the fundamental condition of introspection is the admission of this idea of self-activity is evident if we consider that the world of self-consciousness contains only feelings, volitions, and ideas. Each one of these is twofold, implying subject and object. There are two poles to each. Feeling is nothing unless it has a subject that feels and unless the self that feels is the object of the feeling. So volition implies a self that acts, and, moreover, a determination or limitation of the subject issuing in an objective deed; a volition has the twofold aspect of subject and object. So, too, an idea is always thought as a determination of the self which thinks it or defines it—it is conceived by the mind; it, too, involves subject and object.

Now, by no possibility can external observation discover any such twofold objects in space and time. All objects are dead results or in a process of becoming so through some external cause. If we discriminate dead objects from living objects, and recognize plants, animals, and men before us, we do it because we interpret the forms, shapes, and movements before us as indicative of a self-determining soul within the object. We transfer to the object by an act of inference an internality of life, feeling, volition, or thought such as we know directly only by introspection, and can only know thus.

To expand this theme, one would show the importance of these distinctions of Aristotle, Aquinas, and Leibnitz in making an account of the spiritual life of man, an inventorying the principles of his civilization and making clear and consistent his views of the world.

To live is one thing, but to give a rational and consistent account of one's life is a different and difficult matter. The old psychology succeeded in doing this by these fundamental distinctions, and all new attempts at psychology either prove abortive, or else soon fall into line with the old psychology, so far as these essentials are concerned—they end in affirming self-activity as more substantial than material things and in the admission of various grades of realization of this self-activity or soul.

Another very important step in this recognition of the contents of self-consciousness which the German thinkers have added to the old psychology is the recognition of the characteristic of universality and necessity as the criterion of what is in the constitution of mind itself, as contradistinguished from experience or empirical content. By this, time and space, the categories of quality and quantity, the laws of causality, identity, and excluded middle, the ideas of self-activity, moral responsibility, and religion, all transcend experience, and are formed by introspection.

It is their application which constitutes experience, and experience would be impossible unless the mind had in itself these powers a priori, for these powers make experience possible. If we could not furnish the intuitions of infinite space and time, we could not perceive objects of experience, nor, unless we could furnish the category of causality could we refer our sensations to objects as causes.

Universal and necessary ideas are furnished by the mind itself and not derived from experience, although our consciousness of them may date from our application of them to the content of experience.

Formal logic, with its judgments and syllogisms, its figures and moods, should be regarded also as a part of rational psychology in so far as it reveals to us the forms of action of thinking reason.

All these contributions of the old psychology are of priceless value, as giving us the means to understand the place we occupy in the universe with our ideals of civilization. They furnish us directive power, they give us the regulative ideals of education, religion, jurisprudence, politics, and the general conduct of life.

But if the old psychology has furnished these substantial things, it has not furnished all that is desirable.

There is a realm of conditions which must be understood before man can be made to realize his ideals. The product of nature is an animal and not a civilized man. How can man react upon nature; how can he ascend out of his own natural condition; how can he rise from the stage of sense perception to that of reflection; how from mere reflection to mere thought; how can he put off his state of slavery to the category of thing and environment and rise to the category of self-activity? This is to ask how he can ascend from a mechanical view of the world to an ethical view of it. Certainly he must know the bodily conditions that limit or enthrall the soul. He must be able to recognize what activity tends to fix the soul in lower order of thought and action and what exercises will tend to lift it to a higher order.

To enumerate some of these enthralling conditions through which the soul passes necessarily, if it ever comes to the highest, we must name the influences and attractions of one's habitat, its climate and soil, its outlook, its means of connection with the rest of the world. Then next there is the race and stock of which one comes, black, red, yellow, or white—northern or southern European—inheriting all the evil tendencies and all the good aspirations. Then the temperament and idiosyncrasy of the individual, as his natural talents or his genius—how deep these all lie as predetermining causes in his career. If he is alone the efficient cause or the free will—at least these conditions of habitat, race, and stock furnish the material that he is to quarry and build into the temple of his life—a parthenon, a pantheon, or only a mud hut or a snow house. Then come other natural elements to be regarded—those of sex—the seven ages from infancy to senility, the physical conditions that belong to sleep and dreams and the waking state, the health and disease of the body, the insane tendencies, the results of habits in hardening and fixing the life of the individual in some lower round of activity.

Of all these the laws of growth from infancy to mature age especially concern the educator.

There is for man, as contrasted with lower animals, a long period of helpless infancy. Prof. John Fiske has shown the importance of this fact to the theory of evolution as applied to man. Basing his theory on some hints of Wallace and Spencer, he has explained how the differentiation of the primitive savage man from the animal groups must have been accomplished. Where psychical life is complex there is not time for all capacities to become organized before birth. The prolongation of helpless infancy is required for the development of man's adaptations to the spiritual environment implied in the habits and arts and modes of behavior of the social community into which man is born. He is born first as an infant body. He must be born second as an ethical soul or else he can not become human. The conditions are of extreme complexity. This is the most important contribution of the doctrine of evolution to education. Dr. Nicholas Murray Butler has pointed out that the Greek philosopher Anaximander, more than two thousand years ago, spoke of the prolonged period of infancy as a reason for believing that in the beginning man had an origin from animals of a different species from himself. The Greek did not perceive the relation of this prolonged infancy to the adjustment of the complex physical and spiritual activities of the child to his environment.

In the light of this discovery we may see what an important bearing the results of child study and physiological psychology will have on education; for is it not evident that if the child is at any epoch of his long period of helplessness inured into any habit or fixed form of activity belonging to a lower stage of development the tendency will be to arrest growth at that standpoint and make it difficult or next to impossible to continue the growth of the child into higher and more civilized forms of soul activity? A severe drill in mechanical habits, of memorizing or calculating, any overcultivation of sense perception in tender years, may so arrest the development of the soul at a mechanical method of thinking and prevent the further growth into spiritual insight.

Especially on the second plane of thought, that which follows sense perception and the mechanical stage of thinking, namely, the stage of noticing mere relations and of classifying by mere likeness or difference, or even the search for causal relations, there is most danger of this arrested development. The absorption of the gaze upon adjustments within the machine prevents us from seeing the machine as a whole. The attention to details of coloring and drawing may prevent one from seeing the significance of the great work of art.

The habit of parsing every sentence that one sees may prevent one from enjoying a sonnet of Wordsworth. Too much counting and calculating may at a tender age set the mind in the mechanical habit of looking for mere numerical relations in whatever it sees. Certainly, the young savage who is taught to see in nature only the traces that

mark the passage of a wild animal, or perhaps of a warrior foe, has stopped his growth of observation at a point not very much above that of the hound that hunts by scent. And yet all these mechanical studies are necessary in the course of study. They can not be replaced except by others equally objectionable in the same aspect. The question is, then, where to stop and change to other and higher branches in time to preserve the full momentum of progress that the child has made.

Professor Woodward has pointed out that the educational effect of manual training is destroyed by having the pupils work for the market. It turns the attention toward the training in skill, and the educational effect which comes of first insight is afterwards neglected. The first machine made is an education to its maker; the second and subsequent machines made are only a matter of habit. To keep the intellect out of the abyss of habit, and to make the ethical behavior more and more a matter of unquestioning habit, seems to be the desideratum.

Child study will perhaps find its most profitable field of investigation in this matter of arrested development. If it can tell the teacher how far to push thoroughness to the borders of mechanical perfection, and where to stop just before induration and arrest sets in, it will reform all our methods of teaching. And it can and will do this. The new psychology, in its two phases of direct physiological study of brain and nerves and its observation of child development, will show us how to realize by education the ideals of the highest civilization. The prolonged infancy of man will be in less danger of curtailment through vicious school methods.

The orphaned and outcast child becomes precociously worldlywise. But the school can scarcely reclaim the gamin from the streets of Paris or New York. He has become as cunning and self-helpful as the water rat, but not in ethical or spiritual methods. He should have been held back from the bitter lessons of life by the shielding hand of the family. He would then have become a positive influence for civilization in its height and depth. As a gamin he can live a life only a little above that of the water rat, and is good only to feed the fires of revolution.

THE NEW PSYCHOLOGY.

By Prof. HUGO MÜNSTERBERG.

[Address before the Massachusetts Schoolmasters' Club.]

I wish to thank you heartily for the extreme kindness of your invitation; but the more I appreciate the honor of this opportunity to speak to you the more I am sorry that I can not offer you anything but a most informal talk, with most informal use of the English language, and, still worse, that every word of it must disappoint your pedagogical expectations. You asked me, as a psychologist, to tell you how important psychology is for the teacher; you ask me, as a physiological psychologist, to tell you how necessary the study of the brain and

of the nervous system is for the pedagogue; you asked me, as an experimental psychologist, to tell you how the educational future will depend upon experiments on children; and all that I have to say out of my deepest heart is simply, *I do not believe in it!*

I do not believe in it, and that overwhelming movement toward psychology among the elementary teachers seems to me a high tide of confusion and dilettanteism, and the only thing about which I am doubtful is which of the two necessary results is the worse—the results with the superficial teachers or the results with the earnest ones. The superficial teachers torture the poor children with experiments and deceive themselves with empty phrases about reaction times and psychophysics laws. The earnest and sincere teachers feel very soon that all those woodcuts of pyramidal ganglion cells and pendulum chronoscopes do not help them a bit, and they then become disappointed, lose their confidence in their own ability, and try and try again with the ganglion cells, till they are tired and till their natural teachers' instincts are scattered and ruined. Call me conservative, call me reactionary, call me ignorant, but I adhere to my belief, that the individual teacher, for his teaching methods, does not need any scientific psychology, and that tact and sympathy and interest are more important for him than all the twenty-seven psychological laboratories of this country.

Do I mean, therefore, that psychology is an unimportant study, or that the new psychology is wrong compared with the old one? I think it is not necessary for me to defend myself against the first supposition. I am the director of the large psychological laboratory of Harvard University. For twelve years I have spent the greatest part of my working time in psychological experiments, and most of my publications deal with them. Certainly I can not prove more clearly how deeply I, for one, believe in the importance of psychology. And with regard to the old and the new psychology, I do not recognize such a difference at all. Psychology is a careful observation, description, and explanation of mental phenomena. Will you say that this careful observation is a modern invention? Dear old Aristotle seems to be, then, more up to date than many contributors of the latest magazine. Or do you think that a careful observation is only possible by experimental methods? Are astronomy and geology not exact sciences because their objects can not become material for experiment? Of course, the methods of observation are steadily improving in psychology, just as in every other science, and so it was a great progress when, twenty years ago, the methods of observation became improved by the systematic introduction of the experiments. To be sure, the experimental method brings a degree of exactitude into the observation of mental facts, which is related to the observation without experiment, just as the microscopical study of plants is related to the observation of plants in walking through the fields and forests. And, above all, the artificial conditions of the experiment reduce the phenomena to simple schematic forms

which allow a much better understanding than the complicated processes of the daily life. The naturalist who wishes to study the movement of the water does not go to the ocean and look out for the waves, but he takes a little tank full of water and produces there simple movements; and if he wishes to study the electric discharges he does not wait for a thunderstorm, but produces in his laboratory electric sparks. So the psychologist to-day does not study the mental facts, if possible, in the chance events of his daily life, but he introduces artificial conditions to influence the mental facts, and gets in this way sensations and perceptions, attention and memory, space judgment and time sense, feelings and emotions, reflections and will, and so forth, in the simplest schematic form in his laboratory. Certainly that is a great step forward in the careful observation of mental phenomena but it is not at all a break with the past. Improvements in the methods of careful observation are brought out constantly; with the same right, you may call the psychology of last year the old one compared with that of to-day, which is the new one only till to-morrow's new improvements are proposed.

But you will say, perhaps, the old psychology was based on self-observation, the new one not. But just that is a mistake—an entire mistake. Our experimental work itself is based on self-observation, and even the interpretation of the physiological processes is guided by self-observation. The so-called old psychology was often enough in danger of having its self-observation overwhelmed by the claims of arbitrary definitions; the new psychology restored to self-observation its full rights. If I had to describe shortly our work in the Harvard laboratory, in which now two dozen young investigators devote their time to psychological experimental research, I should say: Self-observation! to be sure, self-observation under artificial conditions; but, above all, self-observation. All those psychological experiments in which self-observation is displaced by methods of indirect observation, as experiments with hypnotized persons, or with the insane, or with babies, or with animals, are excluded from our regular laboratory work, and are in any case only accessory parts of experimental psychology. All the equipment of our institutes and all the instruments for our investigations would be just as useless without self-observation as a microscope would be without an eye to look through it. Self-observation is, therefore, for the new psychology not less important than for the old.

But, finally, you may say: The old psychology was full of philosophical speculations about the soul; the modern keeps to the empirical facts only. Well, that is true; but that is only a question of names. Those speculations about the mind are still just as important and just as necessary to-day as in the old times, only we call them to-day philosophy, and reserve the name psychology for those problems of the older works which had to do with the empirical facts. There is plenty

of that, too, in the older works. The older works represented, therefore, under the title of psychology, after our modern terminology, psychology plus philosophy, while the modern is only psychology without philosophy, and, I am sorry to say, often enough psychology minus philosophy! The modern psychologist is indeed too often proud of the fact that the chief thing which he has added to the old psychology is that he has no philosophy. It reminds me of an educational experience I had in the West. I visited an extremely poor university, and asked the president why they called themselves so proudly a university, as the institute of the neighboring town was called only a college. "Oh," he answered, "we have much more than they have!" "What have you more?" I asked; "have you a graduate school?" "No!" "Have you a law school?" "No!" "Have you a medical school?" "No!" "But what have you, then, more than the others?" "We have no preparatory school!"

I think our modern nomenclature is right. Philosophy of the mind has nothing to do in text-books of psychology, just as philosophy of nature does not come into the text-books of physics. Physics and psychology confine themselves better to the physical and psychological special facts, and take for granted all those general presuppositions which are necessary for the belief in the existence of those facts. But all the more is it indispensable that another doctrine—we may call it philosophy or epistemology—should examine and criticise just these presuppositions. Physics has to presuppose that the physical facts go on in space and time and matter; philosophy has to study how far we have the right to take space and time and matter as real. And the same is true with the presuppositions of psychology. A philosophy of the mind is just as important a supplement of psychology to-day as it was in the past, and, therefore, here also there is no sharp limit between old and new.

But, old or new, what has psychology to do with the teacher? I think in three directions very much indeed. At first, and above all, a teacher is a man of broad interests, and, like every educated man, he ought to know about such an important side of human knowledge. As he is interested in plants, and stones, and stars, how much more must he be interested in the laws of mental life? Broad education has no more inspiring subject, and no subject which is more nearly connected with the theoretical understanding of the social world in which we live and of which we are a part. Secondly, the teacher ought to be able to teach psychology. I believe that the order and lawfulness of mental life can not be brought early enough before intelligent pupils. Of course, I do not mean the details of modern specialistic investigations, but the chief facts of seeing and hearing, attention and memory, perception and imagination, feeling and will, dreams and illusions, could become an extremely important and suggestive part of the school education, not as a special branch of the school curriculum, but sprin-

kled into the whole school work. The reading lesson and the drawing lesson, history and literature, physics and geometry offer endless opportunities for a good teacher. I wish that every boy who tries at home to-day his little electrical or chemical experiments would try in future, also, the elementary experiences of experimental psychology, perhaps tactual or acoustical experiments, or optical illusions or associations. And, thirdly, the teacher who is a careful observer may furnish to the psychologist valuable material by the continual observation of children. The extremely interesting and important collections of such material which my friend, President G. Stanley Hall, has brought together, give the best and most encouraging illustration of such cooperative work. The teacher has so many chances to see events in the child's mind which would escape the official psychologist if he could not rely on the teacher's help, just as the biologist collects the reports of hunters, who have chances for observation which the biologist in his laboratory never can have. In special cases the teacher may introduce even simple experiments to bring out more details about his material. But I add this with some hesitation, as I know how extremely difficult it is to bring out, especially with poor instruments, and in a schoolroom, really reliable material from experiments on children, and unreliable results are, of course, worse than no results at all, as they push forward misleading conclusions. Above all, it seems to me that the facts of the undeveloped mind which can be brought out by experiments do not throw so much light on the psychological processes and laws as the observation of the natural development itself and of the experiences under natural conditions. The development in the child of imitation, of language, of will, of emotions, of the idea of personality, etc., are, for the student of psychology, much more important than any results of experiments in classes which teachers could do. But, in any case, I repeat the teacher can supply the psychologist with valuable and interesting material.

To be sure, these three points I have mentioned are very important points of contact between the work of the psychologist and the functions of the teacher, but I can not see that point of contact which the world emphasizes: I can not see that the modern psychology can help the teacher in his teaching profession, and there is the point of my disagreement.

My first objection results from the necessary narrow limitation of the psychological knowledge which the average teacher can get. He gets bits and ends, and I am sure if he relies on them and transforms them into practical applications after his own prescription, the outcome must be harm and confusion. A physician who knows about one inner organ only, and treats it without regard to all the other parts of the organism, is a dangerous quack. But our mind is certainly still more a unity, and is not divided into chapters, like a text-book of psychology. Every special mental function exists in its isolation only as an abstraction;

the totality is the reality. And this situation becomes the more dangerous the greater the tendency is, under the influence of this newest fad for most modern psychology, to give the attention either to the emptiest generalities or to the most specialistic details which have not even an indirect bearing on that which could be important for the teacher. I see it again and again; the women come into my laboratory and ask, casually, either, "Doctor, do you think that we have a soul?" or they ask me to show them the electrical details of a chronoscope for measuring the time of mental acts in thousandths of a second. They may have seen a woodcut of it in the last Sunday paper, or have read of it in the last illustrated magazine, and as they wish to be "modern" teachers they must know all about it. They come and look around, listen to the rattling of some instruments, and go away after half an hour, assuring me that they have learned very much indeed, and, what is worse, they really believe it. If a scientific pedagogue takes as theoretical study the problem how to get from the modern psychology suggestions for the methods of teaching, all right; his results may be useful hints for the teacher, but the individual teacher who has picked up no more psychology than the few crumbs which have fallen from the table, and thinks that his own psychological studies can control his teaching, is misguided.

But I go further. Even for the scientific student of pedagogics, whose profession it is to look out for educational suggestions, even for him, the outcome of experimental and physiological psychology is relatively still small, because psychology itself knows still too little. It is often said that psychology is to-day in a state in which physics was in the sixteenth century. Does not that in itself suggest modesty? And the necessary characteristics of a science in so early a stage is the quick change of opinions. A famous physiologist said once that he got secretly the statistical result; that every important new physiological discovery has an average life of four years. It seems to me that the new discoveries in modern psychology have often an existence of only four months. That is no opprobrium; just the contrary. For the development of a science it is the most healthful state when many new ideas grow up as working hypotheses, with provisional character; they help to find new facts, but the new facts demand a change of the ideas, and so every discovery is only a new step, which is left as soon as possible for the next step. That is a splendid state for psychology, but it is no state in which practical conclusions from such new discoveries can upset the mature experience of good teachers.

But it seems to me, if I speak sincerely, that all arguments in opposition of this kind, the arguments of the narrow limitation of individual knowledge and of the narrow limitation of psychology itself, do not touch more than the surface of the problem. There is another and deeper point, which is to me far more important, and which is the real motive of my unmodern attitude. I can not hope to bring it out in a

convincing way in such a short talk, but I must show at least the direction in which it lies.

To be sure, all phenomena of the world are physical or psychical; the physical ones are described in physics and chemistry, the psychical ones in psychology, and there can not be a phenomenon which is, as such, not an object for physics or psychology. But it seems to me the mistake of our time—more than that, the disease of our time—to believe that the full reality can be understood as a phenomenon. The world is a series of physical and psychological phenomena, if we think of it as an object of perception, outer and inner perception; but the personality is not only a perceiving subject; it is, above all, a willing subject, and the object of this subject is, therefore, not only a world of phenomena, but a world of objects of the will; that is, a world of values, of appreciation, of duties. The world of phenomena is causal, the world of values is teleological; the one is atomistic, the other seeks the reality, not in the parts, but in the unity of the whole; the one is the world of physical and psychical laws, the other is a world of freedom; in the one everything exists for itself, in the other all reality is given by its relation to us. And this world of freedom is the primary, as it is a free act itself to think of the world as an unfree world in the categories of phenomena, and the world appears as existing phenomenon only if we think the objects of our will independent of our will, and cut loose from it. When I talk to you, to be sure, you can take it as a series of phenomena. Physical phenomena are the nervous processes in me, and the air vibrations which go to your ears, and the nervous processes in you; and the psychical phenomena are the psychical elements which are together in this moment in my consciousness and the contents of your consciousness; but if we describe all these physical and psychical phenomena, even in the most exact way, we describe the experience of this moment in terms which have nothing to do with that reality which really interests you and me. My words may interest the physicist and psychologist as phenomena; for you and me they do not belong to the world of phenomena, because we have not cut them loose in this moment from our will; a responsible free personality expresses its intentions and its convictions to other free personalities. We do not care how all this appears to a perceiving personality; we ask only what it is to willing personalities and what it is to them, is just as much reality, and even more than all that it is to the perceiving subject; that is, as phenomenon. When I speak I do not think about the phenomena which are going on in me, in you, in the air; I do not think of them, and the thought of them would not help me. If I should think of them I could not speak at all. I do not produce sounds and, indirectly, associations by psychophysic laws, but I express a meaning to judging personalities; organisms underlie the laws of physics and psychology; personalities obey the laws of logics and ethics, and the relation between teacher and pupils has not to be thought of as a relation of psychophysical organisms, but as a relation of free personalities.

To be sure, our time is full of that confusion everywhere. The ideas of law and responsibility get mixed with the psychophysical conceptions of anthropological criminology, the political and economical and social ideals are controlled by ideas about phenomena after the scheme of social physiology; we hear even that philosophy has to be looked on from an anthropological point of view, and now comes pedagogics and wishes to become a part of physiological psychology! Not one of you doubts that I have a serious interest in psychological observation and experiments. I have at home two little children, but I have never made a single experiment on them. Not because I think it harmful for them, not at all; I should not say anything against it if other psychologists should like to make little experiments on my children. More than that, I do not even observe them from a psychological point of view, which would be certainly harmless for them. I do not do it, and I may say freely I can not do it, because the reality of those two children is for me, not their existence as a series of psychological phenomena, and they are no phenomena for me, because I can not cut them loose from my will, from my attitude, from my personality. They are for me not phenomena, not objects of perception, but values; objects of my will, of my love, of my duty. You may artificially train yourself to fluctuate between the two attitudes, and observe in one moment what you loved in the moment before, but the one will always interfere with the other; to acknowledge the existence of a phenomenon means just to be convinced that it is independent of our attitude. I wish that the teachers may not give up so easily their attitude of willing subjects, and may not go over so easily to the position of perceiving subjects; that they may love their pupils instead of observing them, and that they may not hunt for bits and ends of psychology, and lose over it the responsible personality.

If I were a professor of chemistry or mineralogy, and an artist, a sculptor, came to me and told me that he wished to create a marble statue, and that he came to study chemistry and mineralogy because marble is a stone and a chemical substance, what would I tell him? I should say: "Dear friend, chemistry is an extremely important science, and you may study it as an educated man, but as an artist you have nothing to do with it. To be sure, you must have a general idea of the marble, and of its difference from clay or plaster, but a real, exact, chemical study of the marble as substance in the laboratory is not your business. If you wish to create your work of art, ask Phidias and Michael Angelo, and, above all, ask your own genius." I think the teacher is an artist; too, who has to create his ideal of an educated personality out of the material which the psychologist studies. But if he comes to me as a psychologist, I must say to him, too, psychology is a very important study, take part in it as a man of broad interests, but as a teacher let it go—it is not your business. If you wish to go to work, ask your Phidiases, ask your Michael Angelos, and, above all, ask your own genius, ask your own conscience, ask your own heart.

PSYCHOLOGY IN UNIVERSITIES.

[In his article on the new psychology as a basis of education, which appeared in the Forum for August, 1894, Dr. G. Stanley Hall, after sketching the development of logic, ethics, and the history of philosophy as subjects in the college course, gives the following account of the later development of courses in psychology.—Ed.]

The fourth and last movement began in this country at the Johns Hopkins University only thirteen years ago, when the first chair of experimental psychology was established. The beginning was extremely modest, and with a less bold and sagacious leadership of that university might perhaps to this day never have been made. The history of this departure shows, better than any other I know of, one of the best sides of our American institutions, viz, readiness to recognize a good thing when seen and to adopt it. Although the second American chair in this department has not been established ten years, an American association of between two and three score instructors is now nearly two years old. Instead of the first lack of text-books, there is now almost an excess of them; and transforming effects in this oldest and most conservative department are incalculable. Two journals, one founded in 1887, and the other in 1894, are devoted exclusively, and eight or ten others partially, to this work. A score of psycho-physic laboratories, with more men and apparatus than can be found in all Europe combined, and with a reputable output of original work, are now in operation. A glance at the chief fields, now cultivated by a complete university department of psychology, will show how transforming for other philosophical disciplines, how all-conditioning for education, and how full of promise for religion this regenerate "science of man" is now fast becoming.

I. First came the laboratory or experimental work. Perhaps in no department will a very little money do so much, as a few even of the normal schools have lately found out to their great benefit. Experiments on the senses, motion, time of psychic actions, fatigue, pain, rhythm, etc., now take most of the vital problems of perception, association, attention, and will, into the laboratory; they quadruple the power of introspection while obviating all its dangers; they shed new light in many dark corners, and they have already reconstructed many old doctrines. Dr. Sanford is embodying the results of this development in a course of about three hundred and fifty experiments hardly less valuable for logic than psychology.

In the modern laboratory conditions, whether of a bit of nerve fiber or cell of a normal human being, are varied indefinitely, and really enlarge human experience. Men sleep on balances with apparatus that records the slightest change of pulse, respiration, circulation, and heat; they test themselves with mild doses of narcotics and other nervines; they multiply or reduce air pressures over the entire dermal

surface; they select a square inch of skin, and with every known test educate it for months; they fatigue definite muscle groups; they measure the exact time and force of memory and will; they register diurnal and even monthly periodicities; they explore the hypnotic state; they apply the various forms of electricity, light, heat, and sound with chemicals for taste and smell.

Fruitful and important as all this is, it by no means covers the ground of the old college philosophy. It has little ethical power in it, and for the average student it is not, perhaps, always idealizing. Hence it is all the more to be regretted that a few of the new psychologists go no further, but are content only to make methods more exact and results more refined. Although they are hardly open to the charge of teaching "psychology without a soul," which is sometimes made, they certainly represent only a single section of the new psychology.

II. Another field is that of comparative psychology. The more we know of animal life, the vaster becomes our conception of instinct. How philosophy treats this, Schelling once said, is one of its best tests. Broadest and lowest are the instincts in the vegetable world, such as the movements by which a root penetrates the soil with sagacity as if its tip were a tiny brain; the tricks of carnivorous and climbing plants and fertilization; the movements of bacteria, infusoria, and from these up to earthworms, ants, bees, trapdoor spiders, and the higher mammals—all these studies shed light upon the nature, and often upon the genesis of what is a priori and innate in man. Neither the instinctive nor the conscious should be allowed to become the key or type by which to explain the other. The psychologist who can surround himself with every form of animal life until his sympathy and insight into its ways are as deep as that of Audubon, or White, of Selborne, and as reverent as that of St. Francis, can not fail of a deep religious feeling that the world is rational to the core. Instinct will seem larger and deeper though not so high as reason. The joy of finding traces of purpose and design beneath us will become a kind of atonement between consciousness in its unconscious basis. The boundless plasticity which fits every condition and fills full every possibility of life shows a wisdom beneath us which we can not escape if we would, and on which, when conscious purpose and endeavor droop, we can fall back with trust as on everlasting arms.

III. Anthropology, which is very lately coming into some of our American colleges, is never, in fact, so large as its name. In older and theological institutions it designated the processes in the fall and redemption of man. For some it is mainly anthropometry, the Benedict school having refined some hundred measurements of the skull alone. For others its means the study of primitive man, cave dwellers, and the like. The psychological side which interests us here is devoted to myth, custom, and belief. If psychology is truly historical, it goes back of all finished systems to their roots in the primary thoughts,

sensations, and feelings of early man, which grow more sacredly secret and hard to extract as tribes lose their ethnic originality. These must often be elaborated from words, folklore, rites, maxims, and social organizations. This higher anthropology seeks for such primeval notions as a naturalist seeks for new species, and it has a passion for "pooling" sentiments, opinions, and views.

When, in the development of a race, such material shoots together into cosmogonies, national epics, or ethnic bibles, the psychic basis for a period of culture is laid, a spiritual cosmos begins. Of this same mother-life, philosophy at its best is but a more elaborate organization. Thus constituted it labors to start from the common vulgar standpoint and to dignify homely commonplace things and duties as Socrates did. It is always saturated with local color; and, instead of being gaspingly thin and abstract, as it appears to those who in periods of strong discipleship and little originality study the great systems from the texts, ignoring the psychic environment whence they sprung, it always seems the most warm and condensed of all the manifold expressions of man's needs and ideals. With a different ethnic basis all systems would have been different. Thus, foreigners can never represent a philosophy that is indigenous, while the "exhaustion method" that works by thought possibility always has to have its work done over again.

Greece first ripened its traditions into philosophy which was freely determined by all the past, and was as homogeneous as the Greek blood. Plato combined the old philosophemes with a deeper insight of his own day, and sought moral regeneration by infecting men with a passion for his ideal. It was national, and it was literature at its highest and best, and became dogma only in its decline; and it was ethically inspired.

Here, too, belong the studies of childhood from the sentiment of love in the parents on to birth and up to maturity. The soul and body of the young child is freighted with potencies and reverberations from a past we know not how remote, and was, for Plato, of all things in the world, most worthy of love, reverence, and service. To Compayré it is "the most attractive of the new fields of study opened by modern science," and Le Conte says, "It is impossible to overestimate the importance of these studies;" while Garbini has just published a first study of the infant's voice. The first center of the child's psychic life, the mouth, toward which everything and every motion goes; the extraordinary sensitiveness of touch with all the organs of the adult skin concentrated on one-sixth the space; the slow development of the ego within, as distinct from the nonego, which includes all outside the bounding dermal surface; the slow development of the seeing power till it becomes a passion; the gradual coordination of the elements of speech and motion—all these are full of lessons for the psychologist. The centers for eye, ear, motion, seem to develop in relative independence, and plenty of play and even selfishness appear to be necessary in

order to associate these elements of the ego, or self, into a unity so complete that shock or even hypnotism can not decompose it. The first six years of childhood are marked by growth so amazing as to suggest the six days of creation, while such problems as personality, the origin of language, character, temperament, will probably never have any solution unless they are found in the study of infancy, the growth of which epitomizes under our eyes the history of the race, each day sometimes representing, perhaps, the race development of centuries. Other aspects of this topic I presented in *The Forum* for December, 1893.

Adult psychology, which is chiefly taught, even to teachers, while it does not disqualify them for their work, is a very different thing from these practical yet scientific researches into the genesis of the human soul. Thus, it is not strange that so many recent associations, centers, and studies, almost by the score, upon nearly every aspect of child life and adolescence, now promise to make every stage of education more scientific than ever before.

IV. For the fourth field of the new psychology I know no better name than studies of decadents. Morel first treated insanity as a form of human degeneration; Strümpel first developed pedagogical pathology, and Lombroso the criminal types of decadents; while the study of idiots, paupers, tramps, blind, deaf, and other defective classes, and even monstrosities, is represented now by a vast and rapidly growing body of literature. Beginning with the more marked abnormalities, these studies proceeded to less marked cases—from idiots to dullards; from the deaf to cases of defective hearing; from insanity to slightly reduced mental responsibility—until now we have a growing body of criticism that applies the refined discriminations of normal and morbid to current tendencies in literature, art, education, religion, and even politics. Modern psychology is thus coming to utilize not only inmates of institutions, but institutions themselves, and the whole wide field of history and life, for clinical and diagnostic purposes; and the word "health" is again approaching its old and larger Biblical sense of holiness.

All human degeneracies, whether individual or inherited, are being substituted, in the world's great algebra of morals, for the almost unknown symbol, sin. Painstaking monographs on the morbidities of love show not only its dominance but its plasticity, and how every manifestation of it, divorced from its natural object in the other sex, may be evoked in the most literal and physical way toward almost any object or act. All the periodicities, so marked in many forms of lunacy, are traced up into normal life. Epilepsy shades down to hiccough; aphasia, to hesitation for a word; mania, to momentary excitement; so that disease almost shows us our normal life with each phenomenon and tendency magnified.

None of the many text-books yet combines these four standpoints; and I have found three years of daily work with advanced and select men not too much time to cover it. In every part it palpitates with

human interest. To teach it is a joy, nay, a passion. However laboriously or even well it may be done, there is always the bitter-sweet feeling that one is here staking out one of the world's great academic highways, and that a pioneer will soon be forgotten in the flood of larger life in which every scrap and detail will be mined and minted and soon become part of the circulating medium of the intellectual world. It may be that the relations of the new psychology to the old philosophy are to be somewhat as the latter were a century ago to theology; that psychology will never be a finished system, but a natural history of mind, dealing with the larger human logic in which all systems move. As is sometimes said of the two Testaments, so, perhaps, we may say of philosophy and psychology, "In the Old the New lay concealed, in the New the Old stands revealed." It is no crisis or revolution, but a slow and necessary growth.

Every stage of human development has been marked by its own special form of productiveness and creation. At one stage man's originating powers developed family and tribal life; later, perhaps, Max Müller's one hundred and twenty-one original Aryan roots were struck out; now, God's creative prophets go up to meet him above the region of eternal frost, and bring down his law from the wild elements and mysteries of nature "to the line of commercial value, leaving it there, knowing that the world will make it useful and profitable, while they go back to resume their original search." Just in proportion as evolutionary views prevail, all the fields it affects focus their interest and product upon man, and the older static views yield to the dynamic.

* * * * *

The one chief and immediate field of application for all this work is its application to education, considered as the science of human nature and the art of developing it to its fullest maturity. It is especially opposed to low views of higher education, which are so prevalent often in higher places. It regards all the real history of the world, from protoplasm up, eliminating all stationary and retrograde movements, as educational. The philosophy of education, of history, and of life are one. Every institution, nation or period, subject, and man, is judged by its service to education in this large sense. Philosophy in our colleges has often gone into by and forbidden ways; its only justification is the service it can render to education. So far from this being an application of it to utilitarian ends, it is its highest consecration; for, when we say of anything that it is good, true, or beautiful in itself, we mean it is purely educational. It suggests a new development of ethics in some city of Hygeia on the basis of health which is already well begun and which can always be appealed to by all classes. It suggests that sociology must be based on biology and psychology as above described, or it will "ride so high a horse that it can not see the ground under it;" it will teach only the dynamics of selfishness unless it has understood the history of the world as a love story, somewhat in Drummond's sense, only more adequately treated.

SUGGESTIONS ON THE STUDY OF CHILDREN.

By WILLIAM L. BRYAN, Ph. D.

Common sense agrees with all the pedagogies that you should know as much as possible about the children you have in charge. The following suggestions are intended to help you do this. Do not expect too much from these suggestions. There is no magic in them to make you know anything of value. Do not suppose that these or any plans for child study can take the place of a common-sense use of what you already know of human nature. Do not suppose that any kind of systematic child study will make unnecessary an intimate personal acquaintance with the children you have in charge. On the contrary, the main value of such plans of study as are here proposed is to help you toward such an acquaintance. Do not suppose that you must choose between the direct observation of children and a study of textbooks on psychology. Rather will such observations and such reading valuably supplement each other, in proportion as both are well done. Above all, do not suppose that any good whatever can come to you from perfunctory study. Here, as everywhere, the conditions of getting good are the deeper interest which does not require to be entertained all the time by tin-rattle discoveries; patience to burrow for long times with little light; faith to wait undismayed in a seeming chaos of facts for a view of the order in them. Here, as everywhere, to get valuable insight means to become initiated through a long and devoted novitiate. Neither philosophy, nor art, nor ethics, nor any sort of science can get through you to the children in sealed packages. Truth must be reborn in you before it is school room wisdom. There is doubtless great advantage in joining with others in this work. By all means form clubs. Remember, however, that organization can easily become an excuse for real work. Remember, too, that a Gideon's army of people who are in earnest is only encumbered by a swarm of people who are not.

The purpose of these studies is not to secure scientific results. Trustworthy scientific results are as hard to get as they are precious. The purpose here is to help teachers, mothers, and children in the high interests they have in common. Nothing is here proposed which any one of good judgment may not hopefully undertake. No inaccessible apparatus is required. Nevertheless, all observations and records should be made with the highest possible fidelity. This is a condition of any good to yourself. Then you should come, if possible, into communication with a psychologist. Possibly your results may afford data of scientific value. After all, a fact is a fact whether or not it is discovered by a doctor. Finally, do not undertake too much. Begin only what you can thoroughly carry out.

I. HYGIENIC.

Assuming that you are not a physician or a specialist in any line affecting health, there are still some important things that you can do for the health of your pupils. In general, you can by careful attention, aided by such plans as those following, discover the existence of many forms of sensory, motor, and central defect.

Vision.—The vision of about 30,000 school children has been tested. It is claimed on the basis of these tests that defect of vision increases from grade to grade and with the increase of school requirements. It is practically impossible for an untrained observer to determine what is the matter with defective eyes, but it is possible for the fact of serious defect to be known. Get Snellen's or other test cards (they can be had doubtless from any firm dealing in optical supplies). The distance at which type of any size should be read is shown on the card. The E's in different positions may be used with persons who can not read. The radiating lines are used to detect astigmatism. Test each eye separately, holding a card before the eye which is not being tested. If you make no formal eye tests, note at any rate which, if any, of the pupils exhibit defective vision. Write a sentence on the board large enough to be read from the rear of the room. See which of the children can not do this. Note also whether any of the children seem to suffer pain from ordinary light.

(I am indebted to Dr. F. C. Heath, of Indianapolis, and to Mr. G. B. Harris, M. O., of Bloomington, Ind., for valuable suggestions on the testing of eyes by untrained persons.)

Hearing.—The hearing of about 20,000 school children has been tested. One investigator reports 2 per cent of defectives. Eleven others report 13 to 30 per cent of defectives. A watch or the whispered voice have usually been used. If you use the voice, place the pupil at a given distance, let the ear which is not being tested be kept closed by an assistant. Dictate sentences, or, perhaps better, numbers, and bid the pupil write. You have only then to take note of those pupils who demand a marked increase of loudness. If you use a watch, let the pupil be blindfolded and one ear closed as above. Note the distance at which the ticking can be heard when the watch is brought toward the pupil. The absolute distance will of course vary with the loudness of your watch. The relative distance will reveal the defectives.

Dermal sensibility.—Abnormal dermal sensibility may be the effect or the cause of central nervous defect. Refined tests are possible only with special apparatus and by trained observers. Marked abnormality may be detected by rough tests as follows: Bid the pupil close his eyes. Touch the back of his hand with a pencil. Bid him touch the same spot with a pencil. Note the error. Note the pupils that vary widely from the average. Press back of hand with point of bone crochet

needle. Note pupils that appear specially sensitive or callous to pain. Question pupils that vary considerably from the average in any of these tests for evidence of extreme dermal sensitiveness or callousness. Note whether these extremes are associated with differing emotional dispositions. If you can do none of these things, note at least the children who seem specially liable to colds and help save them from that.

Nose breathing.—Breathing through the nose is known to be important for physical and mental vigor, memory, power of attention, etc. A simple and obvious test will show which children can not breathe freely through the nose. Try the apparent defectives carefully several times to eliminate cases of temporary stoppage.

Motor ability.—Three classes of tests are proposed. First, general motor tests, to be tried on all pupils. Let all the pupils in your room write some character, say the figure 9, as rapidly as possible for ten seconds. Try once for practice. Then, after a rest, try with care and note results. Take particular note of the fastest third and the slowest third of a given age, particularly of the slowest. Examine the handwriting of all the pupils, taking note of the best and worst, particularly the latter. Are the slow ones in rate of writing the awkward ones in writing? Note especially those pupils who are poor by both tests. Special inability indicates at least retarded motor development.

Note, if present: Twitching of eyelids, rhythmical movement of eyeballs, dropping of eyelids, twitching of face, grinding of teeth, stuttering, tremors or twitching of hands, hyperextension of fingers, irregularities of gait, muscular restlessness, marked flightiness of attention.

Motor tests to be made upon children whom the foregoing tests indicate as abnormal.—Have child's eyes shielded from the light for a few moments; when the eyes are exposed to the light, note whether or not the pupil contracts. The absence of the iris reflex is an early symptom of nervous disease. Move your finger in a circle about the child's field of view, and note if eye movements in any direction are limited. Bid pupil put out his tongue. Note limited, twitching, or asymmetrical movements. Bid pupil extend arms above the head. Note sagging or twitching of either hand; premonitory symptom of chorea. Bid pupil close the eyes and touch his nose or stand on one foot. Inability to do these is symptom of motor incoordination. Can the pupil perform common tasks, as balance on his heels, skate, ride a bicycle, throw a ball straight, catch a ball, thread a needle, and the like? Have him stand quite still for one or two minutes and note twitching movement. In young children these will appear normally. In general, note whether the pupil plays much and skillfully at games requiring motor ability.

Central defect.—Defect in the central nervous system may give rise to such sensory and motor defects as these indicated above, or to mental defects of various sorts. Read the articles by Royce on "Mentally defective children in schools," Educational Review, October, Novem-

ber, and December, 1893. Note in particular any signs of overfatigue. In addition to sensory and motor defects as given above, note (Galton) flightiness of attention, weakening of memory, slowness and difficulty in reasoning about common-sense things, insistent ideas, indecision, etc.

When you have found defect in pupils, what can you do? (a) You will at least not blame the defectives for their inability, as you may now in ignorance be doing. (b) You will without doubt give special consideration to these children, such as common sense and common humanity may dictate. For example: In seating you will have consideration for those who are defective in vision, hearing, in liability to suffer from cold, or in liability to take cold. In the requirement of all school tasks you will make allowance for the defectives. You will specially beware of requiring long-continued stillness, long-continued stress of attention, or long-continued or precise use of the hand, eye, or vocal organs from young or nervous children, or, as Dr. Meyer suggests, from children just recovering from sickness. You will remember that, while fatigue is the normal accompaniment of mental or physical work, mental work exhausts one more rapidly than does physical work; that children become exhausted more readily than do adults; that the bad air of the schoolroom accelerates fatigue; that continuous overfatigue leads to chronic fatigue, and so to a long list of physical and mental ills; and you will consider whether anything which you have power to change is helping any child into chronic fatigue. Notice specially the nervous children, those entering the period of adolescence, and those competing for grades or prizes. Query: If grades and prizes stimulate only a few, and if these few are overworked and overexcited by the device—? Do you have pupils who should probably retire from school for awhile? (c) You will call the attention of parents to the fact of defect, and so in many cases secure for the child competent medical treatment. (d) Lastly, such observations by teachers may be instrumental in inducing school boards to institute expert physical examination of school children, and to provide compensatory instruction for defectives.

II. THE STUDY OF CHILDREN'S MINDS.

Most of the methods proposed for the systematic study of children's minds require that a very large number of children should be tested precisely in some way, and that the results should be treated by statistical methods. Such studies are extremely important, but as a rule teachers have neither time nor training to undertake them profitably. At any rate, such studies will not be proposed here, but only a very few lines of inquiry which may lead teachers to a better acquaintance with their own pupils. Unless teachers seek such acquaintance what are all the maxims from the psychology of apperception but useless pedantries?

(a) What do the children in my school know? What is their present stock of ideas? Read Hall's Contents of Children's Minds on Entering School.

The children make mistakes. Why? Because the task is not rightly presented to their senses? Because of sensory or motor defect? Or because of erroneous apperception? In any case, the source of the error should, if possible, be known, in order that it may be removed; especially so if a certain kind of errors, as often the case, is recurrent; for recurrent errors mean the establishment of vicious mental habits. Suppose, then, you take note of pupils specially addicted to blundering and keep a journal of their mistakes made in oral or written work. A keen study of this record in connection with your knowledge of the child will very likely enable you to discern the source of difficulty. You may find occasion to make a discreet and kindly use of the record to open the pupil's mind to a sense of his need of improvement. At the least, earnest following of this plan will cause you to grow in psychological insight. Finally, if you wish, send your record with an account of the outcome to some psychologist.

(b) What are the children of my grade most interested in? What are they not at all interested in? What do they assimilate, what reject, of my teaching? What do they remember and what forget? I bring them material in the several classes—reading, geography, etc. I require such and such tasks to be performed. What of this gets into the child and stays there? No questions can be more important. Can I get toward an answer to them? Can I do this with what time I have at my disposal? (See literature below for plans hitherto used.)

I have this plan to propose: Sound the children thoroughly as to what they remember of last year's work. That is good Hegelian and Herbartian pedagogy, and I hope also good common sense. First find out as thoroughly as possible just what work was given to your pupils last year in reading, geography, etc. Then have a series of language lessons, followed later by conversation on that work. The list of questions must be made with precise reference to the work which the children had, so I can only give examples:

How many "pieces" can you remember from the Third Reader, which you had last winter? Write the names of all you can remember.

What "pieces" did you like best? Why?

You had a story about a boy stopping the water in the dike. Write all you can remember of the story.

You had a selection on heroism. Write all you can remember about it.

I am sure that such questions could lead to the best sort of language work, as well as to a review of the things formerly learned, so that "no time would be lost." But if you read over the papers and then talk them over with the pupils with the purpose of finding out what sort of thing they are interested in, seize upon, assimilate, and remember, how can this fail to be of the greatest immediate value to you in the direction of this year's work?

I wish that some teachers would try the following modification of this plan: Get hold of the examination questions given to your pupils last year. Without warning, examine them again on the same ques-

tions. If possible compare the results with last year's papers. Besides the immediate value of such studies as this last, they might prove of wider value. These things that no child remembers for a year—what about teaching them for this year? If they must be known, how must we change our method to make them stay known? If they only give discipline, is it possible that something which the child seizes upon with more hunger will give even more discipline? But one must be cautious in making conclusions, still more cautious in making changes.

(c) Who are the leaders in my school? Who have most to do in determining the sentiment of the school as to school work, morals, industry, obedience, truthfulness, kindness, etc.? What is the tone of the school as to these things? I must know. What gives these leaders their influence? Is it physical force, speed, skill, intellectual superiority, friendliness, imperiousness—what? And the followers—let me note the way in which they imitate—in dress, games, carriage, speech, in attitude.

To get inside this matter is more important than anything else for the success of the school, its immediate superficial success and its deep and lasting success. In studying thus the interplay of leader and follower you are moreover studying embryonic human society. You can not go far without getting insight into the laws and forces that hold in history and politics.

(d) Dr. Bergström suggests the following: What appeal do you rely upon most to influence your pupils—fear, love for yourself, utility, politeness, duty, or what? What sort of appeal is the best for the pupil? For the purpose of finding out what influences will be most effective with each pupil, he suggests that teachers seek to become acquainted with the home life of the children, and especially with the tone and ideals which prevail there.

In all the foregoing work, remember that children are very suggestible. You may easily and unconsciously induce sayings and doings such as you are looking for. Again, you may read your own theories or expectations into what they do. Try always to get at the spontaneous activities of the children and write them down "without putting in any of your own."

"But there is no time to do such things as are suggested in this circular. Teachers are overworked already. Teachers can not do everything." Even so. Teachers can not do everything. They are overworked already. The programme must be carried out. The examinations must be held. The grades must be made out. The "ground must be covered." There is no time for culture teaching. There is no time to get acquainted with the children.

EXTRACTS FROM CHILD STUDY—SYSTEMATIC AND UNSYSTEMATIC.

By WILLIAM L. BRYAN, Ph. D.

In this article Professor Bryan says:

I have come especially to urge the more general recognition of two kinds of masters who study human nature—one of them by systematic research and one by personal acquaintance and insight. I wish to show, if I can, by an illustration, that nothing else can take the place of either of these, and that neither of these can take the place of the other.

My illustration is the problem of adolescence. How shall we find out what we need to know in order to help the youth most in this critical period of their lives? What is it that we know of this period from common observation? We know that it is a time of great change, physical and mental. We know that it is a time of critical importance for the establishment of health and habits and other such generalities.

Now come a large body of scientific men, representing many special departments of science, and say that they will help fill out our knowledge. They must do this in their own way. They must take their own time. They can not be hurried. They can not promise every whipstitch a new discovery. They can not promise that each bit of their work will by itself illustrate some general educational law or supply some schoolroom recipe. What is it they will do that takes so long?

(1) They will measure hundreds of thousands of children in every way in which children show measurable change as they grow; the dimensions of the body as a whole and by parts; the weight of the body as a whole and by parts (e. g., Donaldson's measurement of brain weights at different ages); the motor ability in every aspect, as the strength, endurance, speed, and precision of various muscles under various conditions; the sensory discriminative ability for all the senses; the tenacity and span of memory; the precision, speed, and endurance of the mind in various measurable tasks; the apperceptive capital and the spontaneous interests; the character and amount of sickness and the death rate, and still other determinations already made and yet to be made.

(2) When any one of these determinations is made on a sufficiently large number of children, the results are treated by mathematical methods which show not only the average measure of children for a certain age, but also the individual distribution. For example, Professor Bowditch's tables show that 5 per cent of the children of a certain age are below a certain height, 10 per cent below a certain height, 15 per cent below a certain height, etc. A comparison of the results for successive ages shows the so-called curve of growth; that is, the absolute amount and the rate of growth from year to year. From this curve we can see the periods of accelerated and retarded growth. In like manner each set of measurements mentioned is treated by the methods found appropriate to each. And in like manner, accordingly, we find for each measurable function the curve of its growth, the time of life when it grows fast, the time when it grows slowly, and the time when it reaches its full development.

(3) As soon as a few studies like this are made, there begins a comparative study of the several functions that have been measured. What are the exact relations between these several phases of human development? Which of these functions fluctuate up and down together, and which, if any, in contrary directions?

(4) Finally, each and every part of this work must be reviewed in the light of the facts contributed by general biology, physiology, neurology, psychiatry, and related sciences. (The Child-Study Monthly, May, 1895.)

INITIAL MEASURES IN THE ORGANIZATION OF THE DEPARTMENT OF THE IOWA SOCIETY FOR CHILD STUDY.

[The society was organized at Des Moines, December 27, 1894. The following officers were then elected: President, Supt. H. E. Kratz, Sioux City; secretary, Supt. O. C. Scott, Oskaloosa; treasurer, Supt. C. P. Rogers, Marshalltown.]

THE INAUGURATION.

During the year 1894 a few of the school men of the State were in correspondence on the subject of child study, and intimated that they were pursuing lines of study and investigation in their respective schools. A suggestion of one to have a meeting for conference during the session of the State Teachers' Association produced the following circular letter, which was sent to the school men and women of the State—necessarily, however, to a limited number:

PRELIMINARY MEETING FOR CHILD STUDY.

The undersigned, believing that well-organized, systematic child study will lead to a better understanding of child nature, more intelligent teaching, and place education on a more scientific basis, desire that a preliminary meeting be held at Des Moines, Wednesday, December 26, at 9 a. m., in some convenient room in the Hotel Savery, for the purpose of forming an organization and laying plans for the prosecution of such study. The following topics are suggested as a basis of discussion for the preliminary meeting:

- Value of child study in general.
- Brief reports of investigations made.
- Most helpful lines of investigation.
- Plans of work and organization of club.

It is deemed wise to limit the number of participants in this preliminary meeting. You are cordially invited to be present. Please promptly acknowledge the receipt of this invitation, and state definitely whether or not you will be present. Send reply to

H. E. KRATZ, *Sioux City.*

Signed: O. C. Scott, city superintendent, Oskaloosa; G. T. W. Patrick, professor State University, Iowa City; C. E. Shelton, city superintendent, Burlington; G. I. Miller, city superintendent, Boone; F. B. Cooper, city superintendent, Des Moines; Henry Sabin, State superintendent of public instruction; H. E. Kratz, city superintendent, Sioux City.

The meetings were held as called in the letter.

The entire forenoon of December 26 was occupied in interesting lines of study, and in expressions of opinion on organization and plans of work. A committee then appointed to report at a meeting the evening of the following day did work which was approved and resulted in organization and the election of officers.

ORGANIZATION AND CONSTITUTION.

REPORT OF COMMITTEE ON ORGANIZATION FOR CHILD STUDY AS ADOPTED.

GENTLEMEN: Your committee on organization and plans for the carrying forward the work of child study respectfully submit the following report:

Believing that an organization for child study will greatly advance our educational work and help to place it on a scientific basis, your committee recommends:

1. That a society for such study be formed, to be called the Iowa society for child study.

2. That the officers shall be a president, secretary, and treasurer, who shall perform the usual duties of such officers, and who shall constitute an executive committee to appoint leaders to carry on the work of each line of investigation agreed upon, and to have general management of the work of the society.

3. That all persons who are interested in child study and contribute 50 cents annually shall be considered members. All other persons who will aid in carrying on the investigations of the society shall be constituted associate members. Both members and associate members shall be entitled to receive the reports of the society.

In addition we respectfully recommend that a circular be issued promptly by the executive committee, setting forth the general course and purpose of child study, and suggesting the leading lines of investigation which may be made.

4. That for the present chief attention be given to the three following lines of investigation:

(1) Visualization, or eye mindedness and ear mindedness.

(2) Tests of sight and hearing.

(3) Determination of age, weight, and height of respective grades.

We also suggest the advisability of affiliation with the National Association for Child Study.

The executive committee was instructed to take steps to have this society recognized in the programme of the State Teachers' Association as a round table or department.

On the lines of investigation, the first topic, "Eye mindedness and ear mindedness," was assigned to Mr. O. M. Harvey, of Burlington, as leader; the second topic, "Tests of sight and hearing," to Supt. O. P. Bostwick, of Clinton, leader; and the third topic, "Precocity," or "Determination of age, weight, and height of respective grades," to Prof. C. C. Stover, Oskaloosa.

[Extracts from report (1894) of Dr. E. M. Hartwell, director of physical training, Boston public schools.]

INTERRELATION OF MENTAL, MORAL, AND PHYSICAL TRAINING.

Moral, mental, and physical training, each and all, aim at developing the faculty or power of action—of acting in accordance with a rule of right and wrong, of acting intelligently, so that action and the ends of action shall be adapted to each other; of acting easily or with the greatest economy of force—i. e., so that energy shall not be wasted in purposeless, irrelevant, roundabout, or self-defeating movements. This suggests closer relations and interrelations between physical, mental, and moral training than are usually recognized by teachers, or the trainers and governors of teachers. Since physical training aims at perfecting the body as an instrument and at rendering it the willing, prompt, and efficient servant of an intelligent mind and a sensitive and enlightened soul, it can not be gainsaid that physical training lies at the foundation of mental and moral training, or that it enters and must enter as a more or less prominent and necessary factor into the greater number of our educational procedures. The full success or failure of physical training, therefore, does not relate simply to the

size or strength of the red meat we call muscles, but is measured in part by our achievements in the domain of mind and the domain of conduct. In other words, we judge of the mental and moral worth of a man by the purpose, number, consecutiveness, and skillfulness of his ordinary and extraordinary acts, which acts, when viewed objectively and concretely, are reducible to the contractions of muscular fibers. * * *

THE HYGIENIC AND EDUCATIONAL ENDS OF EXERCISE.

The ends of exercise may be characterized, in a general way, as, first, the promotion of health, and, second, the formation of proper habits of action. The one is a hygienic end, while the other is a distinctively educational end. It matters not whether we consider a single muscle, which admits of only a single limited motion, or a group of muscles, or a complicated system of muscular organs, like the organs of speech, or the communal structure we call the body, or a class of school children, or a football team, or a regiment of soldiers, the ends of exercise are practically identical in each case, and can only be attained through a combination of hygienic and educational measures.

The main field of education is the nervous system, and the principles of all forms of education into which physical training enters as a factor are based upon the power of the nervous system to receive impressions and to register them or their effects; in other words, upon its ability to memorize the part it has played in acquired movements and on occasion to revive and repeat such movements. The student of nervous disorders notes carefully the peculiarities of his patient's movements in order to determine the seat of his injury or weakness and the nature and extent of his disease. It is equally necessary that the practical teacher should apprehend the significance of the spontaneous and acquired muscular movements of his pupils, be those movements coarse or fine, since those movements constitute an index of the action of the brain which it is the teacher's business to develop and train and also serve to measure the success and test the character of the teacher's efforts at instruction. This is true not only of instruction in football, military drill, gymnastics, sloyd, shoemaking, and sewing, but of instruction in drawing, singing, and the three R's as well. Genuine success in any of the departments of instruction mentioned above is conditioned on the intelligence and skill of the instructor in selecting and teaching such forms of neuro-muscular action as are adapted to the sex, age, and capacity of his pupils.

The motor element in education is so large and of such vital importance that we hazard little in predicting that the systematic study of movements is destined to play a much more prominent part than has been accorded it hitherto in the professional training of all classes of teachers. "It can scarcely be too often reiterated," says Mercier, an English alienist, in his *Nervous System and the Mind*, "that the study of movements is the only means by which we can gain any insight whatever into the working of the nervous system." * * *

THE EVOLUTION OF THE NERVOUS SYSTEM.

In the evolution of the race and of the individual the more general functions and organs are formed and developed earlier than the special functions and their organs; e. g., the circulatory and alimentary organs develop earlier than the vocal organs and the hands and feet. The same law obtains likewise in the growth and development of the nervous system, both as to its massive and its minute parts. The nervous mechanisms concerned in central movements are at once older and more lowly placed than the mechanisms concerned in peripheral movements. To those parts of the nervous system in man which are formed earliest and are practically completed and fully organized at birth the late Dr. Ross, a leading English neurologist, gave the name "fundamental," while he designated as "accessory" those parts which are rudimentary at birth and comparatively late in their growth and development. Broadly speaking, central movements are represented by low-level, fundamental centers, and peripheral movements by high-level, accessory centers. If, as has been stated, the nervous system is the field of education, education to be natural, safe, and effectual should defer the training of the accessory parts of the nervous system until the development of its fundamental portions has been secured by appropriate forms of general training.

HOW PHYSICAL TRAINING STRENGTHENS THE NERVOUS SYSTEM.

As is well known, city children as a class present more cases of nervous instability than do country children as a class. I therefore venture to quote at length Dr. Ross's views as to the part which physical training should play in the education of children with tendencies to nervous instability:

The children of parents who manifest a predisposition to severe nervous disease, as hysteria and epilepsy, are frequently not merely quick in their perceptive faculties, but are also often possessed of great intellectual powers, and much of their future happiness depends upon judicious mental training in youth. The children of such families ought not to be subjected to any severe mental strain during the period of bodily development, or be allowed to enter into competition with other children in the mental gymnastics which are so fashionable in our public schools. On the other hand, regular, graduated, and systematic exercise in the form of walking, riding, gymnastics, and calisthenics does a great deal of good by strengthening both the muscular and nervous systems. Everything which tends to develop the muscles of the lower extremities and trunk, and indeed all muscles engaged in executing the movements common to both man and the lower animals, tends also to develop the fundamental part of the nervous system, and a good, sound development of the fundamental is the first prerequisite to a well-balanced development of the accessory portion.

The order of the development of the nervous system in the race has been from the fundamental to the accessory portions; and no one can reverse this process with impunity in that further development of the individual which constitutes education in its widest sense. Yet until a few years ago the natural order of development

was reversed in the education of youth, and especially in female education, so far as this could be accomplished by human contrivance and ingenuity. The natural order of development was indeed observed so far as to allow the child to acquire the power of walking prior to that of other accomplishments; but the care of the infant had not yet been transferred to the professional trainer. No sooner, however, had what is technically called education begun than the professional trainer began to exercise the small muscles of vocalization and articulation so as to acquire the art of reading, the small muscles of the hand so as to acquire the art of writing, and in the case of young ladies the still more complicated movements necessary in running over the keyboard of a piano; while little attention was paid to the development of the larger muscles of the trunk and lower extremities, upon the full development of which the future comfort of the individual depends.

In the education of youth in the present day the laws of development and physiology are not so openly violated and defied as they were a few years ago; but much remains to be done in this respect, and especially in the education of children of families who manifest a neuropathic tendency. In the children of such families the greatest possible care should be taken to develop carefully the fundamental actions, inasmuch as a sound development of these involves a stable construction of the fundamental part of the nervous system, a process which makes the latter to offer a greater specific resistance to the paroxysmal discharges from the later-evolved centers of the accessory portions which underlie hysteria, epilepsy, and even many of the psychoses. The process of educating the accessory system, and especially the higher centers of that system, should be regular and systematic; habits of mental scrutiny and self-examination, which, unfortunately, too many religious teachers deem necessary for the welfare of the soul, ought to be discouraged. In one word, education should be made as concrete and objective as possible.

THE LAWS OF DEVELOPMENT AND THEIR BEARING ON EDUCATION.

If this be true—and who shall gainsay it—is it not evident that educational measures of every kind should be selected and coordinated so as to conform to the order and rate of growth and development of the fundamental and accessory neuromuscular mechanisms of the child and the adolescent? Is it too much to ask that educationists should recognize, ponder upon, and be guided by, the laws of development which determine the health and power of the brain centers, and the health and efficiency of the servants and ministers of those centers, namely, the skeletal muscles? It is true, doubtless, that the laws of development are recognized in a way in the conventional division of schools into elementary, secondary, and superior; but it is no less true that the bodily and mental characteristics which differentiate children from youth, and both from adults, are deserving of more careful study and much fuller recognition than they have received hitherto from teachers as a class or from those charged with the appointment and control of teachers.

THE SCOPE OF PSYCHO-PHYSIOLOGY.

[For the information of teachers who are constantly making inquiries into the limits of the several branches of experimental psychology, the following extracts are given from an article by Prof. C. Lloyd Morgan, of University College, Bristol, England. In this article Professor Lloyd gives a very clear outline of the province of psycho-physics and inci-

dentially shows the dearth of equipment for this work in English colleges.—Ed.]

Under the title of psycho-physiology may be comprised these investigations in psychology which have explicit or tacit reference to the concomitant physiological processes and which are characterized by the application of the experiment method. The boundaries of the subject are somewhat ill-defined, since it shades off into physiology on the one hand and into introspective psychology on the other. I shall endeavor in this article to indicate the scope of such experimental investigations.

A chick, not many hours old, will peck with fair but not complete accuracy at any small object which catches its eye. Here we have a reflex and responsive action. A stimulus is received in a sense organ; an impulse is carried centripetally along ingoing or afferent nerve fibers; certain nerve centers are thrown into activity, and an outgoing impulse is carried by efferent nerve fibers to muscles which are thus thrown into coordinated activity. It is probable that on the first occurrence of such an action it is purely automatic and is performed in virtue of the possession by the chick of an inherited organic mechanism. It is accompanied by, but not guided by, consciousness. Such guidance, however, soon becomes evident. Throw to a chick two or three days old half a dozen caterpillars, some of them common "loopers," others yellow and black "cinnabars." In the absence of previous experience they will be equally seized. But the loopers will be swallowed, while the cinnabars will be dropped. Repeat the experiment next day. The loopers will be gobbled up at once. The cinnabars will remain almost, if not quite, untouched. An association has been formed between the sight and taste in the two cases. Consciousness is no longer merely an accompaniment of the action. It controls, enforcing the action in one case, inhibiting or restraining it in another. It is probable that in the higher parts of the brain there are special centers, the physiological functioning of which is associated with this conscious control. Such activities of the chick, first those which are merely responsive and automatic, secondly those which are under conscious control, exemplify a wide range of activities both in animals and man.

Let us note the scope of the experimental work that they suggest. First, there is the nature and range of stimulation of the nerve endings in the sense organ. Secondly, there is the nature and rate of transmission of the impulses along the nerve fibers afferent and efferent. Thirdly, there are the nature and localization of the activities of the automatic centers, and the time occupied by their peculiar functioning. Fourthly, there is the physiological and psychological investigation of the nature and mode of origin of the consciousness which accompanies the movements of parts of the body during response. Fifthly, there are the conditions, psychological and physiological, of association. And

sixthly, there is the mode of application of the control and the localization of specialized control centers, together with the estimation of the time element in control.

All these have been made the subject of careful and systematic inquiry by the method of experiment. In all cases such experimental investigation has led, if not to brilliant positive results, at all events to salutary acknowledgment of ignorance. Difficulties of interpretation abound. Nowhere are these difficulties greater than in the investigation of the physiology and psychology of color vision. Take a dozen individuals and get them successively to indicate by means of the cross fibers of the spectroscope how far they can see along the spectrum, first in the direction of the extreme red, then in the direction of the extreme violet. You will find marked differences. Perhaps one will show a quite unusual amount of variation, and you will probably find by other tests that he is color-blind. Is this variation in the retina or in the visual center of the brain? It is well known that the psychophysiology of vision is still a matter under discussion. One of the difficulties seems to arise from the fact that what is physiologically complex is psychologically simple. Purple gives a simple psychological sensation; but it is due to a combination of physiological impulses, the coalescence or synthesis of which is, so to speak, below the threshold of consciousness. One can not, or I can not, psychologically analyze purple into its constituents, as one can analyze a musical chord. There is still a wide field for research in the psychophysiology of sensation.

An important line of investigation which has now been followed up for many years deals, not with differences of kind or of quality in sensation, but with variations in intensity. Given a stimulus which excites sensation; now diminish it on the one hand until it ceases to excite sensation, and increase it on the other hand until it reaches a maximum of sensation. Then formulate the law which shall express the relation which increase of stimulation bears to the increase of sensation. The results of Weber's researches went to show that we must look not to the absolute but to the relative increments of stimulus; and Fechner, extending and generalizing Weber's results, formulated the law of the relations thus: When the stimuli increase in geometrical progression, the sensations increase in arithmetical progression, or the sensation is proportional to the logarithm of its stimulus. Concerning this law and its philosophical *raison d'être* there has been much animated discussion, into which I do not propose here to enter. Suffice it to say that if we represent by a curve the rise of sensation from the threshold where it first dawns to its maximum, the law seems to hold good only for the mid-region. Various methods of experimentation are employed. Weber and Fechner employed chiefly the method of tabulating the just discernible differences in sensation—of increasing, that is to say, the intensity of the stimulus, and noting when this increment is just perceptible. Others, using larger intervals, have

employed the method of estimating equal increments. Others, again, have constantly doubled the stimulus and noted the change in sensation. In all cases it must be remembered that what we are really dealing with is the perception of the relations between certain given sensations. This is a fact too often lost sight of. We have to infer from these relations the intensity curve in sensation.

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Researches on the rate of transmission of impulses along the afferent and efferent nerves may be regarded as mainly physiological. Suffice it to say that the rate is about 120 feet per second for ingoing impulses, and about 110 feet per second for outgoing impulses. Transmission in the spinal cord appears to be less rapid. The results of experimental investigations on the localization of function in the brain appear to justify the hypothesis that the automatic centers—or the centers concerned in merely organic response—are quite distinct from the control centers, which are probably restricted to the cerebral cortex. It is a good working hypothesis that the centers which minister to control are the seat of those molecular disturbances which are concomitant with consciousness. Consciousness apart from control would be a mere epiphenomenon of no practical use to the organism. It is scarcely necessary for me to do more than remind the reader of the conspicuous success which has crowned the efforts of those who have patiently and systematically applied the experimental method to the localization of the centers of motor control. The motor regions of the hemispheres have now been mapped out with considerable exactitude. * * * In all this field of research, as in the transmission of impulses, we are experimenting more on the physiological than on the psychological side of psycho-physiology.

When we come to association, very little that is exact and assured is known of the physiological aspect. It is said that association tracts—that is, groups of fibers connecting together the several centers in the cerebral cortex—are almost, if not quite, absent at birth, and are established during the development of experience, which may well enough be so; but what may be the physiological conditions of their development we can at present only guess. On the psychological side much has been written on association, and in recent times Mr. Francis Galton, followed by Trautscholdt and others, has carried out experiments with the object of estimating the time that elapses between the reception of a simple impression and the occurrence of a simple idea suggested thereby. Such time would seem to be about three-quarters of a second.

Much attention has been paid to what is termed “reaction time”; that is, the time which elapses between a given simple stimulation and the resulting responsive motion. This was found by Lange to vary according as the person who is being tested directs his attention to the expected sense-impression or the anticipated motor response. In the

case of a simple response to a visual stimulus, the reaction time in the former case is rather more than one-fourth of a second, but in the latter case only about one-sixth of a second. Practice tends to shorten the time, while fatigue lengthens it. A premonitory signal just before the stimulation markedly shortens it. Other experiments have been conducted with a view to ascertaining the time taken in simple cases of discrimination. This, too, varies very much with practice, and it is questionable whether the shorter time-values measure an act of discrimination properly so called. This part of the subject is full of difficulties in the interpretation of the results obtained.

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Enough has now been said to indicate the kind of work on experimental lines which is being done in psychophysiology. In England, while valuable researches have been prosecuted in cerebral localization, comparatively little has been done on the lines which are followed up in the German and American psychological laboratories, though Mr. Francis Galton's valuable psychometric observations have been based on somewhat similar methods. * * * Is it too much to hope that the time is not far distant when there shall be established in England chairs of zoological and experimental psychology, the occupants of which shall have the direction of adequately equipped laboratories, wherein systematic observations, on the lines I have above indicated, may be conducted? (Nature, March 20, 1894, pp. 504, 505.)

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CHAPTER XI.

REPORT OF THE COMMITTEE OF FIFTEEN.

INTRODUCTORY STATEMENT.

At the Saratoga meeting in 1892 the National Educational Association appointed a committee of ten persons to consider and report upon the subjects of study and the methods of instruction in secondary schools, including public high schools, private academies, and schools preparing students for college. President Eliot, of Harvard, was appointed chairman. This committee of ten had authority to select the members of special conferences and to arrange meetings for the discussion of the principal subjects taught in schools preparatory to college. Accordingly, nine such conferences were appointed, each consisting of ten members, representing the colleges on the one hand and the secondary schools on the other. The subjects represented were Latin, Greek, English, other modern languages, mathematics, natural philosophy (including physics, astronomy, and chemistry), natural history (and biology, including botany, zoology, and physiology), history (including also civil government and political economy), and geography (including physical geography, geology, and meteorology).

The report was completed and published in the spring of 1894. Thirty thousand copies were distributed by the Bureau of Education, and since then edition after edition has been printed and sold by the National Educational Association through an agent.

The influence of the report of the committee of ten has been to impel secondary schools toward the choice of well-balanced courses of study containing subjects which belong essentially to secondary education, like algebra, Latin, or physics, and at the same time either to discontinue elementary branches or to apply to the study of these a superior method, by which their principles are traced into higher branches and explained.

The success of the report of the committee of ten has been such as to arouse eager interest in a similar inquiry into the work of the elementary schools. Already, in February, 1893, a committee has been appointed by the department of superintendence in the National Educational Association. It was made to consist of fifteen members instead of ten, and has been known as the committee of fifteen. This committee, with Mr. W. H. Maxwell, superintendent of schools, Brooklyn, N. Y., as chairman, was organized by him into three subcommittees:

(1) On the training of teachers: H. S. Tarbell, Edward Brooks, F. M. Balliet, N. C. Dougherty, and O. H. Cooper, the superintendents of public schools in the cities of Providence, R. I., Philadelphia, Pa., Springfield, Mass., Peoria, Ill., and Galveston, Tex., respectively.

(2) On the correlation of studies in elementary education: W. T. Harris, J. M. Greenwood, C. B. Gilbert, L. H. Jones, and W. H. Maxwell; Messrs. Greenwood, Gilbert, and Jones being city superintendents in Kansas City, St. Paul, and Cleveland, respectively.

(3) On the organization of the city school systems: A. S. Draper, E. P. Seaver, A. G. Lane, A. B. Poland, and W. B. Powell, Mr. Draper being president of the University of Illinois and the other members the city superintendents of Boston, Chicago, and Washington, D. C., and the State superintendent of New Jersey, respectively.

The report of this committee of fifteen was submitted to the department of superintendence at its meeting in February, 1895, in Cleveland.

In order to facilitate the study of the report of the committee of fifteen it is of value to have at hand the questions submitted by each of the three subcommittees: (a) On training of teachers; (b) on correlation of studies; (c) on organization of city school systems. The questions are here appended in the order named.

A.—TRAINING OF TEACHERS.

1. What should be the lowest age at which a person should be permitted to undertake a course of professional work?

2. What should be the requirements for scholarship to enter on such a course?

(a) English grammar, historical grammar, rhetoric, literature.

(b) Mathematics—arithmetic, algebra, geometry.

(c) Botany and zoology.

(d) Drawing.

(e) Music.

(f) History.

(g) Geography

(h) Physics.

(i) Chemistry.

(j) Foreign languages—French, German, Latin, Greek.

(k) Physiology and hygiene.

(l) Mineralogy.

3. Should scholarships be determined by an examination, or should a high school diploma be accepted as evidence? If the latter, should a four years' course be required?

4. What should be the duration of the training school course?

5. What proportion of this time should be devoted to studying principles and methods of education? What proportion to the practice of teaching?

6. To what extent should psychology be studied, and in what way?

7. Along what lines should the observation of children be pursued?

8. What measurements of children should be made, and what apparatus should be required for the purpose?

9. In what way should principles of education be derived from psychology and allied sciences?

10. How far and in what way should the history of education be studied? In what way may the history of education be made of practical use to teachers?

11. In what way should the training in teaching the various subjects of the common school curriculum be pursued?

(a) By writing outlines of lessons?

(b) By giving lessons to fellow pupil teachers?

(c) By the study of books or periodicals devoted to methods of teaching?

(d) By lectures?

12. In a model school, should there be a model teacher placed over each class? Or should there be a model teacher placed over every two classes? Or should the pupil teachers be held responsible for the teaching of all classes, under the direction of a critic teacher?

13. What is the most fruitful plan of observing the work of model teachers?

14. What is the most fruitful plan of criticising the practice work of pupil teachers?

15. Should the criticism be made by the teachers of methodology, or by critic teachers appointed specially for the purpose, or by the model teachers?

16. Should the imparting of knowledge other than psychology, principles, methods, and history of education form any part of the work of a normal or training school?

17. How should a pupil teacher's efficiency be tested in a training school?

18. On what grounds should the diploma of a training school be issued?

B.—CORRELATION OF STUDIES.

1. Should the elementary course be eight years, and the secondary course four years, as at present? Or should the elementary course be six years and the secondary course six years?

2. Has each of the grammar school studies—language (including reading, spelling, grammar, composition), mathematics (arithmetic, algebra, plane geometry), geography, history, natural sciences (botany, zoology, mineralogy), penmanship, drawing, etc., a distinct pedagogical value? If so, what is it?

3. Should other subjects than those enumerated in the second question, such as manual training (including sloyd, sewing, and cooking), physical culture, physics, music, physiology (including the effects of stimulants and narcotics), Latin, or a modern language, be taught in the elementary school course? If so, why?

4. Should the sequence of topics be determined by the logical development of the subject, or by the child's power to apprehend new ideas? Or, to any extent by the evolutionary steps manifested by the race? If so, by the evolution of the race to which the child belongs, or that of the human race?

5. What should be the purpose of attempting a close correlation of studies?

(a) To prevent duplication, eliminate nonessentials, and save time and effort?

(b) To develop the apprehending power of the mind?

(c) To develop character? A purely ethical purpose?

6. Is it possible on any basis to correlate or unify all studies of the elementary school?

7. If not, may they be divided into two or more groups, those of each group being correlated?

8. Is there any way of correlating the results of work in all the groups?

9. What should be the length of recitation periods in each year of the elementary school course? What considerations should determine the length?

10. In what year of the course should each of the subjects mentioned in questions 2 and 3 be introduced, if introduced at all?

11. In making a programme should time be assigned for each subject, or only for the groups of subjects suggested in question 7?

12. How many hours a week for how many years should be devoted to each subject, or each group of subjects?

13. What topics may be covered in each subject, or each group of subjects?

14. Should any subject, or group of subjects, be treated differently for pupils who leave school at 12, 13, or 14 years of age, and for those who are going to a high school?

15. Can any description be given of the best method of teaching each subject, or groups of subjects, throughout the school course?

16. What considerations should determine the point at which the specialization of the work of teachers should begin?

17. On what principle should the promotion of pupils from grade to grade be determined? Who should make the determination?

C.—CITY SCHOOL SYSTEMS.

1. Should there be a board of education, or a commissioner with an advisory council?

2. If a commissioner, should he be elected by the people, or appointed by the mayor, or selected in some other way?

3. What should be his powers and duties?

4. If a board of education, of how many members should it consist?
 5. Should the members be elected or appointed? From the city at large or to represent districts?
 6. Should the members be elected in equal numbers from the two great political parties, or can any other device be suggested to eliminate politics from school administration?
 7. By what authority should the superintendent of schools be elected or appointed; and for what term?
 8. What should be the qualifications of a city superintendent of schools?
 9. Should the city superintendent owe his appointment directly or indirectly to the State educational authorities, and be responsible to them rather than to the local authorities?
 10. In whom should be vested the authority to license teachers? To cancel licenses for cause?
 11. In whom should be vested the power to appoint teachers? In whom the power to discharge teachers?
 12. Supposing teachers appointed to a school, who should have the power to assign them to grades or classes?
 13. Should the principle of competitive examination be introduced in determining promotions to positions of greater responsibility or emolument?
 14. How should the duties of superintendents on the one hand and of principals on the other, in the supervision of methods and of teaching, be defined?
 15. By whom should the course of study be made?
 16. By whom should text-books be selected?
 17. By whom should promotions be made?
 18. By whom should disputes between parents and the teaching force be settled?
 19. By whom should a compulsory education law be enforced?
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I.—REPORT OF THE SUBCOMMITTEE ON THE TRAINING OF TEACHERS.

This report treats of the training of elementary and secondary teachers, considering first that training which should precede teaching in elementary schools. By elementary schools are meant the primary and grammar departments of graded schools and ungraded or rural schools.

Teachers are "born, not made," has been so fully the world's thought until the present century that a study of subjects without any study of principles or methods of teaching has been deemed quite sufficient. Modern educational thought and modern practice, in all sections where excellent schools are found, confirm the belief that there is a profound philosophy on which educational methods are based, and that careful study of this philosophy and its application under expert guidance are essential to making fit the man born to teach.

CONDITIONS FOR PROFESSIONAL TRAINING—AGE AND ATTAINMENTS.

It is a widely prevalent doctrine, to which the customs of our best schools conform, that teachers of elementary schools should have a secondary or high school education, and that teachers of high schools should have a collegiate education. Your committee believe that these

are the minimum acquirements that can generally be accepted; that the scholarship, culture, and power gained by four years of study in advance of the pupils are not too much to be rightfully demanded, and that, as a rule, no one ought to become a teacher who has not the age and attainments presupposed in the possession of a high school diploma. There are differences in high schools, it is true, and a high school diploma is not a fixed standard of attainment; but in these United States it is one of the most definite and uniform standards that we possess, and varies less than college degrees vary or than elementary schools and local standards of culture vary.

It is of course implied in the foregoing remarks that the high school from which the candidate comes is known to be a reputable school, and that its diploma is proof of the completion of a good four years' course in a creditable manner. If these conditions do not exist, careful examination is the only recourse.

If this condition, high school graduation or proof by examination of equivalent scholarship, be accepted, the questions of the age and attainment to be reached before entering upon professional study and training are already settled. But if a more definite statement be desired, then it may be said that the candidate for admission to a normal or training school should be 18 years of age, and should have studied English, mathematics, and science to the extent usually pursued in high schools; should be able to write readily, correctly, and methodically upon topics within the teacher's necessary range of thought and conversation, and should have studied for two or more years at least one language besides English. Skill in music and drawing is desirable, particularly ability to sketch readily and effectively.

TRAINING SCHOOLS.

The training of teachers may be done in normal schools, normal classes in academies and high schools, and in city training schools. To all these the general term "training schools" will be applied. Those instructed in these schools will be called pupils while engaged in professional study, and pupil teachers or teachers in training while in practice teaching preparatory to graduation. Teachers whose work is to be observed by pupil teachers will be called model teachers; teachers in charge of pupil teachers during their practice work will be called critic teachers. In some institutions model teachers and critic teachers are the same persons. The studies usually pursued in academies and high schools will be termed academic, and those post-academic studies to be pursued before or during practice teaching as a preparation therefor will be termed professional.

ACADEMIC STUDIES.

Whether academic studies have any legitimate place in a normal or training school is a question much debated. It can not be supposed that your committee can settle in a paragraph a question upon which

many essays have been written, many speeches delivered, and over which much controversy has been waged.

If training schools are to be distinguished from other secondary schools, they must do a work not done in other schools. So far as they teach common branches of study they are doing what other schools are doing, and have small excuse for existence; but it may be granted that methods can practically be taught only as to subjects; that the study done in professional schools may so treat of the subjects of study, not as objects to be acquired, but as objects to be presented, that their treatment shall be wholly professional.

One who is to teach a subject needs to know it as a whole made up of related and subordinate parts, and hence must study it by a method that will give this knowledge. It is not necessary to press the argument that many pupils enter normal and training schools with such slight preparation as to require instruction in academic subjects. The college with a preparatory department is, as a rule, an institution of distinctly lower grade than one without such a department. Academic work in normal schools that is of the nature of preparation for professional work lowers the standard and perhaps the usefulness of such a school; but academic work done as a means of illustrating or enforcing professional truth has its place in a professional school as in effect a part of the professional work. Professional study differs widely from academic study. In the one, a science is studied in its relation to the studying mind; in the other, in reference to its principles and applications. The aim of one kind of study is power to apply; of the other, power to present. The tendency of the one is to bring the learner into sympathy with the natural world, of the other with the child world. How much broader becomes the teacher who takes both the academic and the professional view! He who learns that he may know and he who learns that he may teach are standing in quite different mental attitudes. One works for knowledge of subject-matter; the other that his knowledge may have due organization, that he may bring to consciousness the apperceiving ideas by means of which matter and method may be suitably conjoined.

How to study is knowledge indispensable to knowing how to teach. The method of teaching can best be illustrated by teaching. The attitude of a pupil in a training school must be that of a learner whose mental stores are expanding, who faces the great world of knowledge with the purpose to survey a portion of it. If we insist upon a sufficient preparation for admission, the question of what studies to pursue and especially the controversy between professional and academic work will be mainly settled.

PROFESSIONAL WORK.

Professional training comprises two parts: (a) The science of teaching, and (b) the art of teaching.

In the science of teaching are included: (1) Psychology as a basis for principles and methods; (2) methodology as a guide to instruction; (3) school economy, which adjusts the conditions of work; and (4) history of education, which gives breadth of view.

The art of teaching is best gained: (1) By observation of good teaching; (2) by practice teaching under criticism.

RELATIVE TIME.

The existence and importance of each of these elements in the training of teachers are generally acknowledged. Their order and proportionate treatment give rise to differences of opinion. Some would omit the practice work entirely, launching the young teacher upon independent work directly from her pupilage in theory. Others, and much the greater number, advise some preparation in the form of guided experience before the training be considered complete. These vary greatly in their estimate of the proportionate time to be given to practice during training. The answers to the question, "What proportion?" which your committee has received, range from one-sixteenth to two-thirds as the proportion of time to be given to practice. The greater number, however, advocate a division of time about equal between theory and practice.

The normal schools incline to the smallest proportion for practice teaching, the city training schools to the largest. It should be borne in mind, however, that city training schools are a close continuation, usually, of high schools, and that the high school courses give a more uniform and probably a more adequate preparation than the students entering normal schools have usually had. Their facilities for practice teaching are much greater than normal schools can secure, and for this reason also practice is made relatively more important. As to the relative merits of city training schools and normal schools, your committee does not desire to express an opinion; the conditions of education demand the existence of both, and both are necessities of educational advancement. It is important to add, however, that in the judgment of your committee not less than half of the time spent under training by the apprentice teacher should be given to observation and practice, and that this practice in its conditions should be as similar as possible to the work she will later be required to do independently.

SCIENCE OF TEACHING—PSYCHOLOGY.

The laws of apperception teach that one is ready to apprehend new truth most readily when he has already established a considerable and well-arranged body of ideas thereon.

Suggestion, observation, and reflection are each most fruitful when a foundation of antecedent knowledge has been provided. Hence your committee recommends that early in their course of study teachers in training assume as true the well-known facts of psychology and the essential principles of education, and make their latter study and practice in the light of these principles. These principles thus become the norm of educational thought, and their truth is continually demonstrated by subsequent experience. From this time theory and practice should proceed together in mutual aid and support.

Most fundamental and important of the professional studies which ought to be pursued by one intending to teach is psychology. This study should be pursued at two periods of the training school course, the beginning and the end, and its principles should be appealed to daily when not formally studied. The method of study should be both deductive and inductive. The terminology should be early learned from a suitable text-book, and significance given to the terms by introspection, observation, and analysis. Power of introspection should be gained, guidance in observation should be given, and confirmation of psychological principles should be sought on every hand. The habit of thinking analytically and psychologically should be formed by every teacher. At the close of the course a more profound and more completely inductive study of physiological psychology should be made. In this way a tendency to investigate should be encouraged or created.

STUDY OF CHILDREN.

Modern educational thought emphasizes the opinion that the child, not the subject of study, is the guide to the teacher's efforts. To know the child is of paramount importance. How to know the child must be an important item of instruction to the teacher in training. The child must be studied as to his physical, mental, and moral condition. Is he in good health? Are his senses of sight and hearing normal, or in what degree abnormal? What is his temperament? Which of his faculties seem weak or dormant? Is he eye-minded or ear-minded? What are his powers of attention? What are his likes and dislikes? How far is his moral nature developed, and what are its tendencies? By what tests can the degree of difference between bright and dull children be estimated?

To study effectively and observingly these and similar questions respecting children is a high art. No common-sense power of discerning human nature is sufficient, though common sense and sympathy go a long way in such study. Weighing, measuring, or elaborate investigation requiring apparatus and laboratory methods are for experts, not teachers in training. Above all, it must ever be remembered that the child is to be studied as a personality and not as an object to be weighed or analyzed.

METHODOLOGY.

A part of the work under this head must be a study of the mental and moral effects of different methods of teaching and examination, the relative value of individual and class instruction at different periods of school life, and in the study of different branches. The art of questioning is to be studied in its foundation principles and by the illustration of the best examples. Some review of the branches which are to be taught may be made, making the teacher's knowledge of them ready and distinct as to the relations of the several parts of the subject to one another and of the whole to kindred subjects. These and many such subjects should be discussed in the class in pedagogy, investigation should be begun, and the lines on which it can be followed should be distinctly laid down.

The laws of psychology, or the capabilities and methods of mind activity, are themselves the fundamental laws of teaching, which is the act of exciting normal and profitable mind action. Beyond these fundamental laws, the principles of education are to be derived inductively. These inductions when brought to test will be found to be rational inferences from psychological laws and thus founded upon and explained by them.

SCHOOL ECONOMY.

School economy, though a factor of great importance in the teacher's training, can be best studied by the teacher of some maturity and experience, and is of more value in the equipment of secondary than of elementary teachers. Only its outlines and fundamental principles should be studied in the ordinary training school.

HISTORY OF EDUCATION.

Breadth of mind consists in the power to view facts and opinions from the standpoints of others. It is this truth which makes the study of history in a full, appreciative way so influential in giving mental breadth. This general advantage the history of education has in still larger degree, because our interest in the views and experiences of those engaged like us in training the young enables us to enter more fully into their thoughts and purposes than we could into those of the warrior or ruler. From the efforts of the man we imagine his surroundings, which we contrast with our own. To the abstract element of theoretical truth is added the warm human interest we feel in the hero, the generous partisan of truth. The history of education is particularly full of examples of noble purpose, advanced thought, and moral heroism. It is inspiring to fill our minds with these human ideals. We read in the success of the unpractical Pestalozzi the award made to self-sacrifice, sympathy, and enthusiasm expended in giving application to a vital truth.

But with enthusiasm for ideals history gives us caution, warns us against the moving of the pendulum, and gives us points of departure from which to measure progress. It gives us courage to attack difficult problems. It shows which the abiding problems are—those that can be solved only by waiting, and not tossed aside by a supreme effort. It shows us the progress of the race, the changing ideals of the perfect man, and the means by which men have sought to realize these ideals. We can from its study better answer the question, What is education, what may it accomplish, and how may its ideals be realized? It gives the evolution of the present and explains anomalies in our work. And yet the history of education is not a subject to be treated extensively in a training school. All but the outlines may better be reserved for later professional reading.

TRAINING IN TEACHING.

Training to teach requires (1) schools for observation and (2) schools for practice.

Of necessity, these schools must be separate in purpose and in organization. A practice school can not be a model school. The pupil teachers should have the opportunity to observe the best models of the teaching art; and the manner, methods, and devices of the model teacher should be noted, discussed, and referred to the foundation principles on which they rest. Allowable modifications of this observed work may be suggested by the pupil teacher and approved by the teacher in charge.

There should be selected certain of the best teachers in regular school work whom the pupil teachers may be sent to observe. The pupil teachers should take no part in the school work nor cause any change therein. They should, however, be told in advance by the teacher what purpose she seeks to accomplish. This excites expectation and brings into consciousness the apperceiving ideas by which the suggestions of the exercise, as they develop, may be seized and assimilated.

At first these visits should be made in company with their teacher of methods, and the work of a single class in one subject should be first observed. After such visits the teacher of methods in the given subject should discuss with the pupil teachers the work observed. The pupil teachers should first describe the work they have seen and specify the excellencies noted, and tell why these things are commendable and upon what laws of teaching they are based. Next the pupil teachers should question the teacher of methods as to the cause, purpose, or influence of things noted, and matters of doubtful propriety—if there be such—should be considered. Then the teacher in turn should question her pupil teachers as to matters that seem to have escaped their notice, as to the motive of the model teacher, as to the reason for the order of treatment, or form of question, wherein lay the merit of her

method, the secret of her power. When pupil teachers have made such observations several times, with several teachers and in several subjects, the broader investigation may be made as to the organization of one of the model rooms, its daily programme of recitations and of study, the methods of discipline, the relations between pupils and teacher, the "school spirit," the school movements, and class progress. This work should be done before teaching groups or classes of pupils is attempted, and should form an occasional exercise during the period of practice teaching as a matter of relief and inspiration. If an artist requires the suggestive help of a good example that stirs his own originality, why should not a teacher?

THE PRACTICE SCHOOL.

During the course in methodology certain steps closely preparatory to practice teaching may be taken. (1) The pupil teacher may analyze the topic to be taught, noting essentials and incidentals, seeking the connections of the subject with the mental possessions of the pupils to be considered and the sequences from these points of contact to the knowledge to be gained under instruction. (2) Next, plans of lessons may be prepared and series of questions for teaching the given subject. (3) Giving lessons to fellow pupil teachers leads to familiarity with the mechanism of class work, such as calling, directing, and dismissing classes, gives the beginner ease and self-confidence, leads to careful preparation of lessons, gives skill in asking questions and in the use of apparatus.

The practice teaching should be in another school, preferably in a different building, and should commence with group teaching in a recitation room apart from the schoolroom. Actual teaching of small groups of children gives opportunity for the study of the child mind in its efforts at reception and assimilation of new ideas and shows the modifications in lesson plans that must be made to adapt the subject-matter to the child's tastes and activities. But the independent charge for a considerable time of a schoolroom with a full quota of pupils, the pupil teacher and the children being much of the time the sole occupants of the room—in short, the realization of ordinary school conditions, with the opportunity to go for advice to a friendly critic—is the most valuable practice; and no practice short of this can be considered of great value except as preparation for this chief form of preparatory practice. All this work should have its due proportion only, or evil may result. For example, lesson plans tend to formalism, to self-conceit, to work in few and narrow lines, to study of subjects rather than of pupils; lessons to fellow pupils make one self-conscious, hinder the growth of enthusiasm in work, and are entirely barren if carried beyond a very few exercises; teaching groups of children for considerable time unfits the teacher for the double burden of discipline and instruction, to bear both of which simultaneously and easily is the teacher's greatest difficulty and most essential power.

A critic teacher should be appointed to the oversight of two such pupil teachers, each in charge of a schoolroom. The critic may also supervise one or more teachers practicing for brief periods daily with groups of children.

The pupil teachers are now to emphasize practice rather than theory, to work under the direction of one who regards the interests of the children quite as much as those of the teacher in training. The critic must admit the principles of education and general methods taught by the teacher of methodology, but she may have her own devices and even special methods that need not be those of the teacher of methodology. No harm will come to the teachers in training if they learn that principles must be assented to by all, but that methods may bear the stamp of the personality of the teacher; that all things must be considered from the point of view of their effect upon the pupils; the critic maintaining the claims of the children, the teacher of methods conforming to the laws of mind and the science of the subjects taught. The critics must teach for their pupil teachers and show in action the justness of their suggestions. In this sense they are model teachers as well as critics.

The critic should at the close of school meet her pupil teachers for a report of their experiences through the day—what they have attempted, how they have tried to do it, why they did so, and what success they gained. Advice as to overcoming difficulties, encouragement under trial, caution if need be, help for the work of to-morrow, occupy the hour. Above all, the critic should be a true friend, a womanly and cultivated woman, and an inspiring companion, whose presence is helpful to work and improving to personality.

LENGTH OF TRAINING SCHOOL COURSE.

There are three elements which determine the time to be spent in a training school—the time given to academic studies, the time given to professional studies, and the time given to practice. The sum of these periods will be the time required for the training course. Taking these in the inverse order, let us consider how much time is required for practice work with pupils. The time given to lesson outlines and practice with fellow pupil teachers may be considered a part of the professional study rather than of practice teaching. The period of practice with pupils must not be too short, whether we consider the interests of the pupils or of the teachers in training. An effort is usually made to counteract the effect upon the children of a succession of crude efforts of teachers beginning practice by strengthening the teaching and supervision through the employment of a considerable number of model and supervisory teachers and by dividing the pupils into small groups so that much individual work can be done. These arrangements, while useful for their purpose, destroy to a considerable degree the usual conditions under which school work is to be done and tend to render the teachers in training formal and imitative.

The practice room should be, as far as may be, the ordinary school, with the difficulties and responsibilities that will be met later. The responsibility for order, discipline, progress, records, reports, communication with parents and school authorities, must fall fully upon the young teacher, who has a friendly assistant to whom she can go for advice in the person of a wise and experienced critic, not constantly at hand, but constantly within reach.

Between the critic and the teacher in training there should exist the most cordial and familiar relations. These relations are based on the one hand upon an appreciation of wisdom and kindness, on the other upon an appreciation of sincerity and effort. The growth of such relations, and the fruitage which follows their growth, require time. A half year is not too long to be allotted for them. During this half-year experience, self-confidence and growth in power have been gained; but the pupil teacher is still not ready to be set aside to work out her own destiny. At this point she is just ready for marked advance, which should be helped and guided. To remain longer with her critic friend may cause imitation rather than independence, may lead to contentment and cessation of growth. She should now be transferred to the care of a second critic of a different personality, but of equal merit. The new critic is bound by her duty and her ambition to see that the first half year's advancement is maintained in the second. The pupil teacher finds that excellence is not all upon one model. The value of individuality impresses her. She gains a view of solid principles wrapped in diverse characteristics. Her own individuality rises to new importance, and the elements of a growth not at once to be checked start up within her. For the care of the second critic a second half year must be allowed, which extends the practice work with pupils through an entire school year. For the theoretical work a year is by general experience proven sufficient. The ideal training course is, then, one of two years' length.

Provision for the extended practice which is here recommended can be made only by city training schools and by normal schools having connection with the schools of a city. To set apart a building of several rooms as a school of practice will answer the purpose only when there are very few teachers in training. In order to give each pupil teacher a year of practice the number of practice rooms must equal the number of teachers to be graduated annually from the training school, be the number 10, or 50, or 500. In any considerable city a school for practice will not suffice; many schools for practice must be secured. This can be done by selecting one excellent teacher in each of a sufficient number of school buildings and making her a critic teacher, giving her charge of two schoolrooms, in each of which is placed a pupil teacher for training.

This insures that the teaching shall be done as nearly as may be under ordinary conditions, brings the pupil teachers at once into the

general body of teachers, makes the corps of critics a haven of zeal and good teaching scattered among the schools. This body of critics will uplift the schools. More capable in the beginning than the average teacher, led to professional study, ambitious for the best things, they make greater progress than they otherwise would do, and are sufficient in themselves to inspire the general body of teachers. For the sake of the pupil teachers, and the children, too, this plan is best. Its economy also will readily be apparent. This plan has been tried for several years in the schools of Providence, with results fully equal to those herein claimed.

TESTS OF SUCCESS.

The tests of success in practice teaching are in the main those to be applied to all teaching. Do her pupils grow more honest, industrious, polite? Do they admire their teacher? Does she secure obedience and industry only while demanding it, or has she influence that reaches beyond her presence? Do her pupils think well and talk well? As to the teacher herself: Has she sympathy and tact, self-reliance and originality, breadth and intensity? Is she systematic, direct, and business like. Is she courteous, neat in person and in work? Has she discernment of character and a just standard of requirement and attainment?

These are some of the questions one must answer before he pronounces any teacher a success or a failure.

Admission to a training school assumes that the pupil has good health, good scholarship, good sense, good ability, and devotion to the work of teaching. If all these continue to be exhibited in satisfactory degree and the pupil goes through the prescribed course of study and practice, the diploma of the school should naturally mark the completion of this work. If it appears on acquaintance that a serious mistake has been made in estimating any of these elements, then, so soon as the mistake is fairly apparent and is probably a permanent condition, the pupil should be requested to withdraw from the work. This is not a case where the wheat and tares should grow together until the harvest at graduation day or the examination preceding it. With such a foundation continually maintained, it is the duty of the school to conquer success for each pupil.

Teaching does not require genius. Indeed genius, in the sense of erratic ability, is out of place in the teacher's chair. Most good teachers at this close of the nineteenth century are made, not born; made from good material well fashioned. There is, however, a possibility that some idiosyncrasy of character, not readily discovered until the test is made, may rise between the prospective teacher and her pupils, making her influence over them small or harmful. Such a defect, if it exist, will appear during the practice teaching, and the critic will discover it. This defect, on its first discovery, should be plainly pointed

out to the teacher in training and her efforts should be joined with those of the critic in its removal.

If this effort be a failure and the defect be one likely to harm the pupils hereafter to be taught, then the teacher in training should be informed and requested to withdraw from the school. There should be no test at the close of the school course to determine fitness for graduation. Graduation should find the teacher serious in view of her responsibilities, hopeful because she has learned how success is to be attained, inspired with the belief that growth in herself and in her pupils is the great demand and the great reward.

TRAINING OF TEACHERS FOR SECONDARY SCHOOLS.

Perhaps one-sixth of the great body of public school teachers in the United States are engaged in secondary work and in supervision. These are the leading teachers. They give educational tone to communities, as well as inspiration to the body of teachers.

It is of great importance that they be imbued with the professional spirit springing from sound professional culture. The very difficult and responsible positions that they fill demand ripe scholarship, more than ordinary ability, and an intimate knowledge of the period of adolescence, which Rousseau so aptly styles the second birth.

The elementary schools provide for the education of the masses. Our secondary schools educate our social and business leaders. The careers of our college graduates who mainly fill the important places in professional and political life are determined largely by the years of secondary training. The college or university gives expansion and finish, the secondary school gives character and direction.

It should not be forgotten that the superintendents of public schools are largely taken from the ranks of secondary teachers, and that the scholarship, qualities, and training required for the one class are nearly equivalent to that demanded for the other.

Our high schools, too, are the source of supply for teachers in elementary schools. Hence the pedagogic influences exerted in the high school should lead to excellence in elementary teaching.

The superintendent who with long foresight looks to the improvement of his schools will labor earnestly to improve and especially to professionalize the teaching in his high school. The management which makes the high school an independent portion of the school system, merely attached and loftily superior, which limits the supervision and influence of the superintendent to the primary and grammar grades, is shortsighted and destructive.

There ought also to be a place and a plan for the training of teachers for normal schools. The great body of normal and training schools in the United States are secondary schools. Those who are to teach in these schools need broad scholarship, thorough understanding of educational problems, and trained experience. To put into these schools

teachers whose scholarship is that of the secondary school and whose training is that of the elementary is to narrow and depress rather than broaden and elevate.

If college graduates are put directly into teaching, without special study and training, they will teach as they have been taught. The methods of college professors are not in all cases the best, and, if they were, high school pupils are not to be taught nor disciplined as college students are. High school teaching and discipline can be that neither of the grammar school nor of the college, but is *sui generis*. To recognize this truth and the special differences is vital to success. This recognition comes only from much experience, at great loss, and partial failure, or by happy intuition not usually to be expected, or by definite instruction and directed practice. Success in teaching depends upon conformity to principles, and these principles are not a part of the mental equipment of every educated person.

These considerations and others are the occasion of a growing conviction, widespread in this land, that secondary teachers should be trained for their work even more carefully than elementary teachers are trained. This conviction is manifested in the efforts to secure normal schools adapted to training teachers for secondary schools, notably in Massachusetts and New York, and in the numerous professorships of pedagogy established in rapidly increasing numbers in our colleges and universities.

The training of teachers for secondary schools is in several essential respects the same as that for teachers of elementary schools. Both demand scholarship, theory, and practice. The degree of scholarship required for secondary teachers is by common consent fixed at a collegiate education. No one, with rare exceptions, should be employed to teach in a high school who has not this fundamental preparation.

It is not necessary to enter in detail into the work of theoretical instruction for secondary teachers. The able men at the head of institutions and departments designed for such work neither need nor desire advice upon this matter. And yet for the purposes of this report it may be allowable to point out a plan for the organization of a secondary training school.

Let it be supposed that two essentials have been found in one locality: (1) A college or university having a department of pedagogy and a department of post-graduate work; (2) a high school, academy, or preparatory school whose managers are willing to employ and pay a number of graduate students to teach under direction for a portion of each day. These two conditions being met, we will suppose that pedagogy is offered as an elective to the college seniors.

Two years of instruction in the science and art of teaching are to be provided—one, mostly theory, with some practice, elective during the senior year; the other, mostly practice, with some theory, elective for one year as post-graduate work.

During the senior year is to be studied:

THE SCIENCE OF TEACHING.

The elements of this science are:

I. Psychology in its physiological, apperceptive, and experimental features. The period of adolescence here assumes the prominence that childhood has in the psychological study preparatory to teaching in lower schools. This is the period of beginnings, the beginning of a more ambitious and generous life, a life having the future wrapped up in it; a transition period of mental storm and stress, in which egoism gives way to altruism, romance has charm, and the social, moral, and religious feelings bud and bloom. To guide youth at this formative stage, in which an active fermentation occurs, that may give wine or vinegar, according to conditions, requires a deep and sympathetic nature and that knowledge of the changing life which supplies guidance wise and adequate.

II. Methodology: A discussion of the principles of education and of the methods of teaching the studies of the secondary schools.

III. School economy should be studied in a much wider and more thorough way than is required for elementary teachers. The school systems of Germany, France, England, and the leading systems of the United States should also be studied.

IV. History of education, the tracing of modern doctrine back to its sources; those streams of influence now flowing and those that have disappeared in the sands of the centuries.

V. The philosophy of education as a division of an all-involving philosophy of life and thought in which unity is found.

THE ART OF TEACHING.

This includes observation and practice. The observation should include the work of different grades and of different localities, with minute and searching comparison and reports upon special topics. How does excellent primary work differ from excellent grammar grade work? How do the standards of excellence differ between grammar grades and high school grades? Between high school and college work? What are the arguments for and against coeducation in secondary schools as determined by experience? What are the upper and lower limits of secondary education as determined by the nature of the pupil's effort?

In the college class in pedagogy much more than in the elementary normal school can the class itself be made to afford a means of practice to its members. Quizzes may be conducted by students upon the chapters of the books read or the lectures of the professors. These exercises may have for their object review, or improved statement, or enlarged inference and application, and they afford an ample opportunity to cultivate the art of questioning, skill in which is the teacher's most essential accomplishment.

The head of the department of pedagogy will of course present the essential methods of teaching, and the heads of other departments may lecture on methods pertaining to their subject of study; or secondary teachers of known success may still better present the methods now approved in the several departments of secondary work

POST-GRADUATE YEAR.

To those graduates who have elected pedagogy in their senior year may be offered the opportunity of further study in this department, with such other post-graduate work as taste and opportunity permit. From those selecting advanced work in pedagogy the board in charge of the affiliated secondary school should elect as many teachers for its school as are needed, employing them for two-thirds time at one-half the usual pay for teachers without experience. Under the professor of pedagogy of the college, the principal, and the heads of departments of the school these student teachers should do their work, receiving advice, criticism, and illustration as occasion requires. The time for which they are employed would provide for two hours of class work and about one hour of clerical work or study while in charge of a schoolroom. These student teachers should be given abundant opportunity for the charge of pupils while reciting or studying, at recess and dismissals, and should have all the responsibilities of members of the faculty of this school. Their work should be inspected as frequently as may be by the heads of the departments in which they teach, by the principal of the school, and by the professor of pedagogy. These appointments would be virtually fellowships with an opportunity for most profitable experience.

In the afternoon of each day these students should attend to college work and especially to instruction from the professor in pedagogy, who could meet them occasionally with the heads of the departments under whose direction they are working.

On Saturdays a seminary of two hours' duration might be held, conducted by the professor of pedagogy and attended by the student teachers and the more ambitious teachers of experience in the vicinity. These seminaries would doubtless be of great profit to both classes of participants and the greater to each because of the other. [Such a training school for secondary teachers in connection with Brown University and the Providence high school is contemplated for the coming year.]

It will not be needful to specify further the advantages to the student teachers. The arrangement likewise affords advantage to the affiliated school, especially in the breadth of view this work would afford to the heads of departments, the intense desire it would beget in them for professional skill, the number of perplexing problems which it would force them to attempt the solution of.

The visits of the professor of pedagogy and the constant comparison he would make between actual and ideal conditions would lead him to seek the improvement not only of the students in practice but of the school as a whole.

When several earnest and capable people unite in a mutual effort to improve themselves and their work all the essential conditions of progress are present.

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CHAPTER XII.

REPORT OF THE COMMITTEE OF FIFTEEN (CONTINUED).

II.—REPORT OF THE SUBCOMMITTEE ON THE CORRELATION OF STUDIES IN ELEMENTARY EDUCATION.

The undersigned committee agrees upon the following report, each member reserving for himself the expression of his individual divergence from the opinion of the majority by a statement appended to his signature, enumerating the points to which exception is taken and the grounds for them.

I. CORRELATION OF STUDIES.

Your committee understands by correlation of studies:

1. LOGICAL ORDER OF TOPICS AND BRANCHES.

First, the arrangement of topics in proper sequence in the course of study in such a manner that each branch develops in an order suited to the natural and easy progress of the child and so that each step is taken at the proper time to help his advance to the next step in the same branch, or to the next steps in other related branches of the course of study.

2. SYMMETRICAL WHOLE OF STUDIES IN THE WORLD OF HUMAN LEARNING.

Second, the adjustment of the branches of study in such a manner that the whole course at any given time represents all the great divisions of human learning, as far as is possible at the stage of maturity at which the pupil has arrived, and that each allied group of studies is represented by some one of its branches best adapted for the epoch in question; it being implied that there is an equivalence of studies to a greater or less degree within each group, and that each branch of human learning should be represented by some equivalent study, so that, while no great division is left unrepresented, no group shall have superfluous representatives and thereby debar other groups from a proper representation.

3. PSYCHOLOGICAL SYMMETRY—THE WHOLE MIND.

Third, the selection and arrangement of the branches and topics within each branch considered psychologically with a view to afford the best exercise of the faculties of the mind and to secure the unfolding of those faculties in their natural order, so that no one faculty is so overcultivated or so neglected as to produce abnormal or one-sided mental development.

4. CORRELATION OF PUPIL'S COURSE OF STUDY WITH THE WORLD IN WHICH HE LIVES—HIS SPIRITUAL AND NATURAL ENVIRONMENT.

Fourth and chiefly, your committee understands by correlation of studies the selection and arrangement in orderly sequence of such objects of study as shall give the child an insight into the world that he lives in and a command over its resources such as is obtained by a helpful cooperation with one's fellows. In a word, the chief consideration to which all others are to be subordinated, in the opinion of your committee, is this requirement of the civilization into which the child is born, as determining not only what he shall study in school, but what habits and customs he shall be taught in the family before the school age arrives, as well as that he shall acquire a skilled acquaintance with some one of a definite series of trades, professions, or vocations in the years that follow school; and, furthermore, that this question of the relation of the pupil to his civilization determines what political duties he shall assume and what religious faith or spiritual aspirations shall be adopted for the conduct of his life.

To make more clear their reasons for the preference here expressed for the objective and practical basis of selection of topics for the course of study, rather than the subjective basis so long favored by educational writers, your committee would describe the psychological basis, already mentioned, as being merely formal in its character, relating only to the exercise of the so-called mental faculties.

It would furnish a training of spiritual powers analogous to the gymnastic training of the muscles of the body. Gymnastics may develop strength and agility without leading to any skill in trades or useful employment. So an abstract psychological training may develop the will, the intellect, the imagination, or the memory, but without leading to an exercise of acquired power in the interests of civilization. The game of chess would furnish a good course of study for the discipline of the powers of attention and calculation of abstract combinations, but it would give its possessor little or no knowledge of man or nature. The psychological ideal which has prevailed to a large extent in education has in the old phrenology and in the recent studies in physiological psychology sometimes given place to a biological ideal. Instead of the view of mind as made up of faculties like will, intellect, imagination, and emotion, conceived to be all necessary to the soul if developed

in harmony with one another, the concept of nerves or brain tracts is used as the ultimate regulative principle to determine the selection and arrangement of studies. Each part of the brain is supposed to have its claim on the attention of the educator, and that study is thought to be the most valuable which employs normally the larger number of brain tracts. This view reaches an extreme in the direction of formal as opposed to objective or practical grounds for selecting a course of study. While the old psychology with its mental faculties concentrated its attention on the mental processes and neglected the world of existing objects and relations upon which those processes were directed, physiological psychology tends to confine its attention to the physical part of the process, the organic changes in the brain cells and their functions.

Your committee is of the opinion that psychology of both kinds, physiological and introspective, can hold only a subordinate place in the settlement of questions relating to the correlation of studies. The branches to be studied and the extent to which they are studied will be determined mainly by the demands of one's civilization. These will prescribe what is most useful to make the individual acquainted with physical nature and with human nature so as to fit him as an individual to perform his duties in the several institutions—family, civil society, the state, and the church. But next after this, psychology will furnish important considerations that will largely determine the methods of instruction, the order of taking up the several topics so as to adapt the school work to the growth of the pupil's capacity, and the amount of work so as not to overtax his powers by too much or arrest the development of strength by too little. A vast number of subordinate details belonging to the pathology of education, such as the hygienic features of school architecture and furniture, programmes, the length of study hours and of class exercises, recreation, and bodily reactions against mental effort, will be finally settled by scientific experiment in the department of physiological psychology.

Inasmuch as your committee is limited to the consideration of the correlation of studies in the elementary school, it has considered the question of the course of study in general only in so far as this has been found necessary in discussing the grounds for the selection of studies for the period of school education occupying the eight years from 6 to 14 years, or the school period between the kindergarten on the one hand and the secondary school on the other. It has not been possible to avoid some inquiry into the true distinction between secondary and elementary studies, since one of the most important questions forced upon the attention of your committee is that of the abridgment of the elementary course of study from eight or more years to seven or even six years, and the corresponding increase of the time devoted to studies usually assigned to the high school and supposed to belong to the secondary course of study for some intrinsic reason.

II. THE COURSE OF STUDY—EDUCATIONAL VALUES.

Your committee would report that it has discussed in detail the several branches of study that have found a place in the curriculum of the elementary school, with a view to discover their educational value for developing and training the faculties of the mind, and more especially for correlating the pupil with his spiritual and natural environment in the world in which he lives.

A. LANGUAGE STUDIES.

There is first to be noted the prominent place of language study that takes the form of reading, penmanship, and grammar in the first eight years' work of the school. It is claimed for the partiality shown to these studies that it is justified by the fact that language is the instrument that makes possible human social organization. It enables each person to communicate his individual experience to his fellows and thus permits each to profit by the experience of all. The written and printed forms of speech preserve human knowledge and make progress in civilization possible. The conclusion is reached that learning to read and write should be the leading study of the pupil in his first four years of school. Reading and writing are not so much ends in themselves as means for the acquirement of all other human learning. This consideration alone would be sufficient to justify their actual place in the work of the elementary school. But these branches require of the learner a difficult process of analysis. The pupil must identify the separate words in the sentence he uses, and in the next place must recognize the separate sounds in each word. It requires a considerable effort for the child or the savage to analyze his sentence into its constituent words, and a still greater effort to discriminate its elementary sounds. Reading, writing, and spelling in their most elementary form therefore constitute a severe training in mental analysis for the child of 6 to 10 years of age. We are told that it is far more disciplinary to the mind than any species of observation of differences among material things, because of the fact that the word has a twofold character—addressed to external sense as spoken sound to the ear, or as written and printed words to the eye—but containing a meaning or sense addressed to the understanding and only to be seized by introspection. The pupil must call up the corresponding idea by thought, memory, and imagination, or else the word will cease to be a word and remain only a sound or character.

On the other hand, observation of things and movements does not necessarily involve this twofold act of analysis, introspective and objective, but only the latter—the objective analysis. It is granted that we all have frequent occasion to condemn poor methods of instruction as teaching words rather than things. But we admit that we mean empty sounds or characters rather than true words. Our suggestions

for the correct method of teaching amount in this case simply to laying stress on the meaning of the word, and to setting the teaching process on the road of analysis of content rather than form. In the case of words used to store up external observation the teacher is told to repeat and make alive again the act of observation by which the word obtained its original meaning. In the case of a word expressing a relation between facts or events, the pupil is to be taken step by step through the process of reflection by which the idea was built up. Since the word, spoken and written, is the sole instrument by which reason can fix, preserve, and communicate both the data of sense and the relations discovered between them by reflection, no new method in education has been able to supplant in the school the branches, reading and penmanship. But the real improvements in method have led teachers to lay greater and greater stress on the internal factor of the word, on its meaning, and have in manifold ways shown how to repeat the original experiences that gave the meaning to concrete words, and the original comparisons and logical deductions by which the ideas of relations and causal processes arose in the mind and required abstract words to preserve and communicate them.

It has been claimed that it would be better to have first a basis of knowledge of things, and secondarily and subsequently a knowledge of words. But it has been replied to this that the progress of the child in learning to talk indicates his ascent out of mere impressions into the possession of true knowledge. For he names objects only after he has made some synthesis of his impressions and has formed general ideas. He recognizes the same object under different circumstances of time and place, and also recognizes other objects belonging to the same class by and with names. Hence the use of the word indicates a higher degree of self-activity—the stage of mere impressions without words or signs being a comparatively passive state of mind. What we mean by things first and words afterwards is therefore not the apprehension of objects by passive impressions so much as the active investigation and experimenting which come after words are used and the higher forms of analysis are called into being by that invention of reason known as language, which, as before said, is a synthesis of thing and thought, of outward sign and inward signification.

Rational investigation can not precede the invention of language any more than blacksmithing can precede the invention of hammers, anvils, and pincers. For language is the necessary tool of thought used in the conduct of the analysis and synthesis of investigation.

Your committee would sum up these considerations by saying that language rightfully forms the center of instruction in the elementary school, but that progress in methods of teaching is to be made, as hitherto, chiefly by laying more stress on the internal side of the word, its meaning; using better graded steps to build up the chain of experience or the train of thought that the word expresses.

The first three years' work of the child is occupied mainly with the mastery of the printed and written forms of the words of his colloquial vocabulary; words that he is already familiar enough with as sounds addressed to the ear. He has to become familiar with the new forms addressed to the eye, and it would be an unwise method to require him to learn many new words at the same time that he is learning to recognize his old words in their new shape. But as soon as he has acquired some facility in reading what is printed in the colloquial style, he may go on to selections from standard authors. The literary selections should be graded, and are graded in almost all series of readers used in our elementary schools, in such a way as to bring those containing the fewest words outside of the colloquial vocabulary into the lower books of the series, and increasing the difficulties step by step as the pupil grows in maturity. The selections are literary works of art possessing the required organic unity and a proper reflection of this unity in the details, as good works of art must do. But they portray situations of the soul, or scenes of life, or elaborated reflections, of which the child can obtain some grasp through his capacity to feel and think, although in scope and compass they far surpass his range. They are adapted therefore to lead him out of and beyond himself, as spiritual guides.

Literary style employs, besides words common to the colloquial vocabulary, words used in a semitechnical sense expressive of fine shades of thought and emotion. The literary work of art furnishes a happy expression for some situation of the soul or some train of reflection hitherto unutterable in an adequate manner. If the pupil learns this literary production, he finds himself powerfully helped to understand both himself and his fellow-men. The most practical knowledge of all, it will be admitted, is a knowledge of human nature—a knowledge that enables one to combine with his fellow-men and to share with them the physical and spiritual wealth of the race. Of this high character, as humanizing or civilizing, are the favorite works of literature found in the school readers, about one hundred and fifty English and American writers being drawn upon for the material. Such are Shakespeare's speeches of Brutus and Mark Antony, Hamlet's and Macbeth's soliloquies; Milton's *L'Allegro* and *Il Penseroso*; Gray's *Elegy*; Tennyson's *Charge of the Light Brigade* and *Ode on the Death of the Duke of Wellington*; Byron's *Waterloo*; Irving's *Rip Van Winkle*; Webster's *Reply to Hayne*, the *Trial of Knapp*, and *Bunker Hill oration*; Scott's *Lochinvar*, *Marmion*, and *Roderick Dhu*; Bryant's *Thanatopsis*; Longfellow's *Psalm of Life*, *Paul Revere* and *The Bridge*; O'Hara's *Bivouac of the Dead*; Campbell's *Hohenlinden*; Collins's *How Sleep the Brave*; Wolfe's *Burial of Sir John Moore*, and other fine prose and poetry from Addison, Emerson, Franklin, the Bible, Hawthorne, Walter Scott, Goldsmith, Wordsworth, Swift, Milton, Cooper, Whittier, Lowell, and the rest. The reading and study of fine selections in prose and verse furnish the chief æsthetic training of the ele-

mentary school. But this should be reenforced by some study of photographic or other reproductions of the world's great masterpieces of architecture, sculpture, and painting. The frequent sight of these reproductions is good; the attempt to copy or sketch them with the pencil is better; best of all is an æsthetic lesson on their composition, attempting to describe in words the idea of the whole that gives the work its organic unity, and the devices adopted by the artist to reflect this idea in the details and reenforce its strength. The æsthetic taste of teacher and pupil can be cultivated by such exercises, and once set on the road of development this taste may improve through life.

A third phase of language study in the elementary school is formal grammar. The works of literary art in the readers, reenforced as they ought to be by supplementary reading at home of the whole works from which the selections for the school readers are made, will educate the child in the use of a higher and better English style. Technical grammar never can do this. Only familiarity with fine English works will insure one a good and correct style. But grammar is the science of language, and as the first of the seven liberal arts it has long held sway in school as the disciplinary study par excellence. A survey of its educational value, subjective and objective, usually produces the conviction that it is to retain the first place in the future. Its chief objective advantage is that it shows the structure of language and the logical forms of subject, predicate, and modifier, thus revealing the essential nature of thought itself, the most important of all objects, because it is self-object. On the subjective or psychological side grammar demonstrates its title to the first place by its use as a discipline in subtle analysis, in logical division and classification, in the art of questioning, and in the mental accomplishment of making exact definitions. Nor is this an empty, formal discipline, for its subject-matter, language, is a product of the reason of a people not as individuals, but as a social whole, and the vocabulary holds in its store of words the generalized experience of that people, including sensuous observation and reflection, feeling and emotion, instinct and volition.

No formal labor on a great objective field is ever lost wholly, since at the very least it has the merit of familiarizing the pupil with the contents of some one extensive province that borders on his life, and with which he must come into correlation; but it is easy for any special formal discipline, when continued too long, to paralyze or arrest growth at that stage. The overcultivation of the verbal memory tends to arrest the growth of critical attention and reflection. Memory of accessory details, too, so much prized in the school, is also cultivated often at the expense of an insight into the organizing principle of the whole and the causal nexus that binds the parts. So, too, the study of quantity, if carried to excess, may warp the mind into a habit of neglecting quality in its observation and reflection. As there is no subsumption in the quantitative judgment, but only dead equality or

inequality (A is equal to or greater or less than B), there is a tendency to atrophy in the faculty of concrete syllogistic reasoning on the part of the person devoted exclusively to mathematics. For the normal syllogism uses judgments wherein the subject is subsumed under the predicate (This is a rose—the individual rose is subsumed under the class rose; Socrates is a man, etc.). Such reasoning concerns individuals in two aspects, first as concrete wholes and secondly as members of higher totalities or classes—species and genera. Thus, too, grammar, rich as it is in its contents, is only a formal discipline as respects the scientific, historic, or literary contents of language, and is indifferent to them. A training for four or five years in parsing and grammatical analysis practiced on literary works of art (Milton, Shakespeare, Tennyson, Scott) is a training of the pupil into habits of indifference toward and neglect of the genius displayed in the literary work of art, and into habits of impertinent and trifling attention to elements employed as material or texture, and a corresponding neglect of the structural form, which alone is the work of the artist. A parallel to this would be the mason's habit of noticing only the brick and mortar or the stone and cement in his inspection of the architecture, say of Sir Christopher Wren. A child overtrained to analyze and classify shades of color—examples of this one finds occasionally in a primary school whose specialty is "objective teaching"—might in later life visit an art gallery and make an inventory of colors without getting even a glimpse of a painting as a work of art. Such overstudy and misuse of grammar as one finds in the elementary school, it is feared, exists to some extent in secondary schools, and even in colleges, in the work of mastering the classic authors.

Your committee is unanimous in the conviction that formal grammar should not be allowed to usurp the place of a study of the literary work of art in accordance with literary method. The child can be gradually trained to see the technical "motives" of a poem or prose work of art and to enjoy the æsthetic inventions of the artist. The analysis of a work of art should discover the idea that gives it organic unity, the collision and the complication resulting, the solution and dénouement. Of course these things must be reached in the elementary school without even a mention of their technical terms. The subject of the piece is brought out; its reflection in the conditions of the time and place to heighten interest by showing its importance; its second and stronger reflection in the several details of its conflict and struggle; its reflection in the dénouement, wherein its struggle ends in victory or defeat and the ethical or rational interests are vindicated; and the results move outward, returning to the environment again in ever-widening circles. Something resembling this is to be found in every work of art, and there are salient features which can be briefly but profitably made subject of comment in familiar language with even the youngest pupils. There is an ethical and an æsthetic content to

each work of art. It is profitable to point out both of these in the interest of the child's growing insight into human nature. The ethical should, however, be kept in subordination to the æsthetical, but for the sake of the supreme interests of the ethical itself. Otherwise the study of a work of art degenerates into a goody-goody performance and its effects on the child are to cause a reaction against the moral. The child protects his inner individuality against effacement through external authority by taking an attitude of rebellion against stories with an appended moral. Herein the superiority of the æsthetical in literary art is to be seen. For the ethical motive is concealed by the poet and the hero is painted with all his brittle individualism and self-seeking. His passions and his selfishness, gilded by fine traits of bravery and noble manners, interest the youth, interest us all. The established social and moral order seems to the ambitious hero to be an obstacle to the unfolding of the charms of individuality. The deed of violence gets done and the Nemesis is aroused. Now his deed comes back on the individual doer and our sympathy turns against him and we rejoice in his fall. Thus the æsthetical unity contains within it the ethical unity. The lesson of the great poet or novelist is taken to heart, whereas the ethical announcement by itself might have failed, especially with the most self-active and aspiring of the pupils. Aristotle pointed out in his *Poetics* this advantage of the æsthetic unity, which Plato in his *Republic* seems to have missed. Tragedy purges us of our passions, to use Aristotle's expression, because we identify our own wrong inclinations with those of the hero, and by sympathy we suffer with him and see our intended deed returned upon us with tragic effect, and are thereby cured.

Your committee has dwelt upon the æsthetic side of literature in this explicit manner because they believe that the general tendency in elementary schools is to neglect the literary art for the literary formalities which concern the mechanical material rather than the spiritual form. Those formal studies should not be discontinued, but subordinated to the higher study of literature.

Your committee reserves the subject of language lessons, composition writing, and what relates to the child's expression of ideas in writing for consideration under part 3 of this report, treating of programme.

B. ARITHMETIC.

Side by side with language study is the study of mathematics in the schools, claiming the second place in importance of all studies. It has been pointed out that mathematics concerns the laws of time and space—their structural form, so to speak—and hence that it formulates the logical conditions of all matter both in rest and in motion. Be this as it may, the high position of mathematics as the science of all quantity is universally acknowledged. The elementary branch of mathematics is arithmetic, and this is studied in the primary and grammar schools from six to eight years, or even longer. The relation of arithmetic to

the whole field of mathematics has been stated (by Comte, Howison, and others) to be that of the final step in a process of calculation in which results are stated numerically. There are branches that develop or derive quantitative functions—say geometry for spatial forms and mechanics for movement and rest and the forces producing them. Other branches transform these quantitative functions into such forms as may be calculated in actual numbers, namely, algebra in its common or lower form, and in its higher form as the differential and integral calculus and the calculus of variations. Arithmetic evaluates or finds the numerical value for the functions thus deduced and transformed. The educational value of arithmetic is thus indicated both as concerns its psychological side and its objective practical uses in correlating man with the world of nature. In this latter respect as furnishing the key to the outer world in so far as the objects of the latter are a matter of direct enumeration—capable of being counted—it is the first great step in the conquest of nature. It is the first tool of thought that man invents in the work of emancipating himself from thralldom to external forces. For by the command of number he learns to divide and conquer. He can proportion one force to another and concentrate against an obstacle precisely what is needed to overcome it. Number also makes possible all the other sciences of nature which depend on exact measurement and exact record of phenomena as to the following items: Order of succession, date, duration, locality, environment, extent of sphere of influence, number of manifestations, number of cases of intermittence. All these can be defined accurately only by means of number. The educational value of a branch of study that furnishes the indispensable first step toward all science of nature is obvious. But psychologically its importance further appears in this, that it begins with an important step in analysis, namely, the detachment of the idea of quantity from the concrete whole, which includes quality as well as quantity. To count, one drops the qualitative and considers only the quantitative aspect. So long as the individual differences (which are qualitative in so far as they distinguish one object from another) are considered, the objects can not be counted together. When counted the distinctions are dropped out of sight as indifferent. As counting is the fundamental operation of arithmetic, and all other arithmetical operations are simply devices for speed by using remembered countings instead of going through the detailed work again each time, the hint is furnished the teacher for the first lessons in arithmetic. This hint has been generally followed out and the child set to work at first upon the counting of objects so much alike that the qualitative difference is not suggested to him. He constructs gradually his tables of addition, subtraction, and multiplication, and fixes them in his memory. Then he takes his next higher step, namely, the apprehension of the fraction. This is an expressed ratio of two numbers, and therefore a much more complex thought than he has met with in dealing

with the simple numbers. In thinking five-sixths, he first thinks five and then six, and holding these two in mind thinks the result of the first modified by the second. Here are three steps instead of one, and the result is not a simple number but an inference resting on an unperformed operation. This psychological analysis shows the reason for the embarrassment of the child on his entrance upon the study of fractions and the other operations that imply ratio. The teacher finds all his resources in the way of method drawn upon to invent steps and half steps, to aid the pupil to make continuous progress here. All these devices of method consist in steps by which the pupil descends to the simple number and returns to the complex. He turns one of the terms into a qualitative unit and thus is enabled to use the other as a simple number. The pupil takes the denominator, for example, and makes clear his conception of one-sixth as his qualitative unit, then five-sixths is as clear to him as five oxen. But he has to repeat this return from ratio to simple numbers in each of the elementary operations—addition, subtraction, multiplication, and division, and in the reduction of fractions—and finds the road long and tedious at best. In the case of decimal fractions the psychological process is more complex still; for the pupil has given him one of the terms, the numerator, from which he must mentally deduce the denominator from the position of the decimal point. This doubles the work of reading and recognizing the fractional number. But it makes addition and subtraction of fractions nearly as easy as that of simple numbers and assists also in multiplication of fractions. But division of decimals is a much more complex operation than that of common fractions.

The want of a psychological analysis of these processes has led many good teachers to attempt decimal fractions with their pupils before taking up common fractions. In the end they have been forced to make introductory steps to aid the pupil, and in these steps to introduce the theory of the common fraction. They have by this refuted their own theory.

Besides (a) simple numbers and the four operations with them, (b) fractions common and decimal, there is (c) a third step in number, namely, the theory of powers and roots. It is a further step in ratio, namely, the relation of a simple number to itself as power and root. The mass of material which fills the arithmetic used in the elementary school consists of two kinds of examples: First, those wherein there is a direct application of simple numbers, fractions, and powers; and secondly, the class of examples involving operations in reaching numerical solutions through indirect data and consequently involving more or less transformation of functions. Of this character is most of the so-called higher arithmetic and such problems in the text-book used in the elementary schools as have, not inappropriately, been called (by Gen. Francis A. Walker in his criticism on common school arithmetic) numerical "conundrums." Their difficulty is not found in the strictly

arithmetical part of the process of the solution (the third phase above described), but rather in the transformation of the quantitative function given into the function that can readily be calculated numerically. The transformation of functions belongs strictly to algebra. Teachers who love arithmetic, and who have themselves success in working out the so-called numerical conundrums, defend with much earnestness the current practice which uses so much time for arithmetic. They see in it a valuable training for ingenuity and logical analysis, and believe that the industry which discovers arithmetical ways of transforming the functions given in such problems into plain numerical operations of adding, subtracting, multiplying, or dividing is well bestowed. On the other hand the critics of this practice contend that there should be no merely formal drill in school for its own sake, and there should be, always, a substantial content to be gained. They contend that the work of the pupil in transforming quantitative functions by arithmetical methods is wasted, because the pupil needs a more adequate expression than number for this purpose; that this has been discovered in algebra, which enables him to perform with ease such quantitative transformations as puzzle the pupil in arithmetic. They hold, therefore, that arithmetic pure and simple should be abridged, and elementary algebra introduced after the numerical operations in powers, fractions, and simple numbers have been mastered, together with their applications to the tables of weights and measures and to percentage and interest. In the seventh year of the elementary course there would be taught equations of the first degree and the solution of arithmetical problems that fall under proportion or the so-called "rule of three," together with other problems containing complicated conditions—those in partnership for example. In the eight year quadratic equations could be learned, and other problems of higher arithmetic solved in a more satisfactory manner than by numerical methods. It is contended that this earlier introduction of algebra, with a sparing use of letters for known quantities, would secure far more mathematical progress than is obtained at present on the part of all pupils, and that it would enable many pupils to go on into secondary and higher education who are now kept back on the plea of lack of preparation in arithmetic, the real difficulty in many cases being a lack of ability to solve algebraic problems by an inferior method.

Your committee would report that the practice of teaching two lessons daily in arithmetic, one styled "mental" or "intellectual" and the other "written" arithmetic (because its exercises are written out with pencil or pen), is still continued in many schools. By this device the pupil is made to give twice as much time to arithmetic as to any other branch. It is contended by the opponents of this practice, with some show of reason, that two lessons a day in the study of quantity have a tendency to give the mind a bent or set in the direction of thinking quantitatively, with a corresponding neglect of the power to observe

and to reflect upon qualitative and casual aspects, for mathematics does not take account of causes, but only of equality and difference in magnitude. It is further objected that the attempt to secure what is called thoroughness in the branches taught in the elementary schools is often carried too far; in fact, to such an extent as to produce arrested development (a sort of mental paralysis) in the mechanical and formal stages of growth. The mind in that case loses its appetite for higher methods and wider generalizations. The law of apperception, we are told, proves that temporary methods of solving problems should not be so thoroughly mastered as to be used involuntarily or as a matter of unconscious habit, for the reason that a higher and a more adequate method of solution will then be found more difficult to acquire. The more thoroughly a method is learned, the more it becomes part of the mind, and the greater the repugnance of the mind toward a new method. For this reason parents and teachers discourage young children from the practice of counting on the fingers, believing that it will cause much trouble later to root out this vicious habit and replace it by purely mental processes. Teachers should be careful, especially with precocious children, not to continue too long in the use of a process that is becoming mechanical; for it is already growing into a second nature, and becoming a part of the unconscious apperceptive process by which the mind reacts against the environment, recognizes its presence, and explains it to itself. The child that has been overtrained in arithmetic reacts apperceptively against his environment chiefly by noticing its numerical relations—he counts and adds; his other apperceptive reactions being feeble, he neglects qualities and causal relations. Another child who has been drilled in recognizing colors apperceives the shades of color to the neglect of all else. A third child, excessively trained in form studies by the constant use of geometric solids and much practice in looking for the fundamental geometric forms lying at the basis of the multifarious objects that exist in the world, will as a matter of course apperceive geometric forms, ignoring the other phases of objects.

It is certainly an advance on immediate sense perception to be able to separate or analyze the concrete, whole impression, and consider the quantity apart by itself. But if arrested mental growth takes place here the result is deplorable. That such arrest may be caused by too exclusive training in recognizing numerical relations is beyond a doubt.

Your committee believe that, with the right methods, and a wise use of time in preparing the arithmetic lesson in and out of school, five years are sufficient for the study of mere arithmetic—the five years beginning with the second school year and ending with the close of the sixth year; and that the seventh and eighth years should be given to the algebraic method of dealing with those problems that involve difficulties in the transformation of quantitative indirect functions into numerical or direct quantitative data.

Your committee, however, does not wish to be understood as recommending the transfer of algebra as it is understood and taught in most secondary schools, to the seventh year or even to the eighth year of the elementary school. The algebra course in the secondary school, as taught to pupils in their fifteenth year of age, very properly begins with severe exercises with a view to discipline the pupil in analyzing complex literate expressions at sight and to make him able to recognize at once the factors that are contained in such combinations of quantities. The proposed seventh-grade algebra must use letters for the unknown quantities and retain the numerical form of the known quantities, using letters for these very rarely, except to exhibit the general form of solution or what, if stated in words, becomes a so-called "rule" in arithmetic. This species of algebra has the character of an introduction or transitional step to algebra proper. The latter should be taught thoroughly in the secondary school. Formerly it was a common practice to teach elementary algebra of this sort in the preparatory schools and reserve for the college a study of algebra proper. But in this case there was often a neglect of sufficient practice in factoring literate quantities, and as a consequence the pupil suffered embarrassment in his more advanced mathematics; for example, in analytical geometry, the differential calculus, and mechanics. The proposition of your committee is intended to remedy the two evils already named: First, to aid the pupils in the elementary school to solve by a higher method the more difficult problems that now find place in advanced arithmetic; and secondly, to prepare the pupil for a thorough course in pure algebra in the secondary school.

Your committee is of the opinion that the so-called mental arithmetic should be made to alternate with written arithmetic for two years and that there should not be two daily lessons in this subject.

C. GEOGRAPHY.

The leading branch of the seven liberal arts was grammar, being the first of the trivium (grammar, rhetoric, and logic). Arithmetic, however, led the second division, the quadrivium (arithmetic, geometry, music, and astronomy). We have glanced at the reasons for the place of grammar as leading the humane studies as well as for the place of arithmetic as leading the nature studies. Following arithmetic as the second study in importance among the branches that correlate man to nature is geography. It is interesting to note that the old quadrivium of the Middle Ages included geography, under the title of geometry, as the branch following arithmetic in the enumeration, the subject-matter of their so-called "geometry" being chiefly an abridgment of Pliny's geography, to which were added a few definitions of geometric forms, something like the primary course in geometric solids in our elementary schools. So long as there has been elementary education there has been something of geography included. The Greek education laid stress on teaching the second book of Homer containing the

Catalogue of the Ships and a brief mention of the geography and history of all the Greek tribes that took part in the Trojan war. History remains unseparated from geography and geometry in the Middle Ages. Geography has preserved this comprehensiveness of meaning as a branch of the study in the elementary schools down to the present day. After arithmetic, which treats of the abstract or general conditions of material existence, comes geography with a practical study of man's material habitat and its relations to him. It is not a simple science by itself, like botany or geology or astronomy, but a collection of sciences levied upon to describe the earth as the dwelling place of man and to explain something of its more prominent features. About one-fourth of the material relates strictly to the geography, about one-half to the inhabitants, their manners, customs, institutions, industries, productions, and the remaining one-fourth to items drawn from the sciences of mineralogy, meteorology, botany, zoology, and astronomy. This predominance of the human feature in a study ostensibly relating to physical nature, your committee considers necessary and entirely justifiable. The child commences with what is nearest to his interests, and proceeds gradually toward what is remote and to be studied for its own sake. It is therefore a mistake to suppose that the first phase of geography presented to the child should be the process of continent formation. He must begin with the natural differences of climate and lands and waters and obstacles that separate peoples, and study the methods by which man strives to equalize or overcome these differences by industry and commerce, to unite all places and all people, and make it possible for each to share in the productions of all. The industrial and commercial idea is therefore the first central idea in the study of geography in the elementary schools. It leads directly to the natural elements of difference in climate, soil, and productions, and also to those in race, religion, political status, and occupations of the inhabitants, with a view to explain the grounds and reasons for this counter process of civilization which struggles to overcome the differences. Next comes the deeper inquiry into the process of continent formation, the physical struggle between the process of upheaving or upbuilding of continents and that of their obliteration by air and water; the explanation of the mountains, valleys, and plains, the islands, volcanic action, the winds, the rain distribution. But the study of cities, their location, the purposes they serve as collecting, manufacturing, and distributing centers, leads most directly to the immediate purpose of geography in the elementary school. From this beginning, and holding to it as a permanent interest, the inquiry into causes and conditions proceeds concentrically to the sources of the raw materials, the methods of their production, and the climatic, geologic, and other reasons that explain their location and their growth.

In recent years, especially through the scientific study of physical geography, the processes that go to the formation of climate, soil, and

general configuration of land masses have been accurately determined, and the methods of teaching so simplified that it is possible to lead out from the central idea mentioned to the physical explanations of the elements of geographical difference quite early in the course of study. Setting out from the idea of the use made of the earth by civilization, the pupil in the fifth and sixth years of his schooling (at the age of 11 or 12) may extend his inquiries quite profitably as far as the physical explanations of land shapes and climates. In the seventh and eighth year of school much more may be done in this direction. But it is believed that the distinctively human interest connected with geography in the first years of its study should not yield to the purely scientific one of physical processes until the pupil has taken up the study of history.

The educational value of geography, as it is and has been in elementary schools, is obviously very great. It makes possible something like accuracy in the picturing of distant places and events and removes a large tract of mere superstition from the mind. In the days of newspaper reading one's stock of geographical information is in constant requisition. A war on the opposite side of the globe is followed with more interest in this year than a war near our own borders before the era of the telegraph. The general knowledge of the locations and boundaries of nations, of their status in civilization and their natural advantages for contributing to the world market, is of great use to the citizen in forming correct ideas from his daily reading.

The educational value of geography is even more apparent if we admit the claims of those who argue that the present epoch is the beginning of an era in which public opinion is organized into a ruling force by the agency of periodicals and books. Certainly neither the newspaper nor the book can influence an illiterate people; they can do little to form opinions where the readers have no knowledge of geography.

As to the psychological value of geography little need be said. It exercises in manifold ways the memory of forms and the imagination; it brings into exercise the thinking power in tracing back toward unity the various series of causes. What educative value there is in geology, meteorology, zoology, ethnology, economics, history, and politics is to be found in the more profound study of geography, and, to a proportionate extent, in the study of its merest elements.

Your committee is of the opinion that there has been a vast improvement in the methods of instruction in this branch in recent years, due in large measure to the geographical societies of this and other countries. At first there prevailed what might be named sailor geography. The pupil was compelled to memorize all the capes and headlands, bays and harbors, mouths of rivers, islands, sounds, and straits around the world. He enlivened this to some extent by brief mention of the

curiosities and oddities in the way of cataracts, water gaps, caves, strange animals, public buildings, picturesque costumes, national exaggerations, and such matters as would furnish good themes for sailors' yarns. Little or nothing was taught to give unity to the isolated details furnished in endless number. It was an improvement on this when the method of memorizing capital cities and political boundaries succeeded. With this came the era of map drawing. The study of watersheds and commercial routes, of industrial productions and centers of manufacture and commerce, has been adopted in the better class of schools. Instruction in geography is growing better by the constant introduction of new devices to make plain and intelligible the determining influence of physical causes in producing the elements of difference and the counter process of industry and commerce by which each difference is rendered of use to the whole world and each locality made a participator in the productions of all.

D. HISTORY.

The next study, ranked in order of value, for the elementary school is history. But, as will be seen, the value of history, both practically and psychologically, is less in the beginning and greater at the end than geography. For it relates to the institutions of men, and especially to the political state and its evolution. While biography narrates the career of the individual, civil history records the careers of nations. The nation has been compared to the individual by persons interested in the educational value of history. Man has two selves, they say, the individual self and the collective self of the organized state or nation. The study of history is, then, the study of this larger, corporate, social, and civil self. The importance of this idea is thus brought out more clearly in its educational significance. For to learn this civil self is to learn the substantial condition which makes possible the existence of civilized man in all his other social combinations—the family, the church, and the manifold associated activities of civil society. For the state protects these combinations from destruction by violence. It defines the limits of individual and associated effort, within which each endeavor reenforces the endeavors of all, and it uses the strength of the whole nation to prevent such actions as pass beyond these safe limits and tend to collision with the normal action of the other individuals and social units. Hobbes called the state a leviathan, to emphasize its stupendous individuality and organized self-activity. Without this, he said, man lives in a state of "constant war, fear, poverty, filth, ignorance, and wretchedness; within the state dwell peace, security, riches, science, and happiness." The state is the collective man who "makes possible the rational development of the individual man, like a mortal God, subduing his caprice and passion and compelling obedience to law, developing the ideas of justice, virtue, and religion, creating property and ownership, nurture and

education." The education of the child into a knowledge of this higher self begins early within the nurture of the family. The child sees a policeman or some town officer, some public building, a courthouse or a jail; he sees or hears of an act of violence, a case of robbery or murder followed by arrest of the guilty. The omnipresent higher self, which has been invisible hitherto, now becomes visible to him in its symbols and still more in its acts.

History in school, it is contended, should be the special branch for education in the duties of citizenship. There is ground for this claim. History gives a sense of belonging to a higher social unity which possesses the right of absolute control over person and property in the interest of the safety of the whole. This, of course, is the basis of citizenship; the individual must feel this or see this solidarity of the state and recognize its supreme authority. But history shows the collisions of nations, and the victory of one political ideal accompanied by the defeat of another. History reveals an evolution of forms of government that are better and better adapted to permit individual freedom, and the participation of all citizens in the administration of the government itself.

People who make their own government have a special interest in the spectacle of political evolution as exhibited in history. But it must be admitted that this evolution has not been well presented by popular historians. Take, for instance, the familiar example of old-time pedagogy, wherein the Roman republic was conceived as a freer government than the Roman empire that followed it by persons apparently misled by the ideas of representative self-government associated with the word republic. It was the beginning of a new epoch when this illusion was dispelled, and the college student became aware of the true Roman meaning of republic, namely, the supremacy of an oligarchy on the Tiber that ruled distant provinces in Spain, Gaul, Asia Minor, Germany, and Africa for its selfish ends and with an ever-increasing arrogance. The people at home in Rome, not having a share in the campaigns on the border land, did not appreciate the qualities of the great leaders who, like Caesar, subdued the nations by forbearance, magnanimity, trust, and the recognition of a sphere of freedom secured to the conquered by the Roman civil laws, which were rigidly enforced by the conquerer, as much as by the violence of arms. The change from republic to empire meant the final subordination of this tyrannical Roman oligarchy, and the recognition of the rights of the provinces to Roman freedom. This illustration shows how easily a poor teaching of history may pervert its good influence or purpose into a bad one. For the Roman monarchy under the empire secured a degree of freedom never before attained under the republic, in spite of the election of such tyrants as Nero and Caligula to the imperial purple. The civil service went on as usual administering the affairs of distant countries, educating them in Roman jurisprudence, and cultivating a love for

accumulating private property. Those countries had before lived communistically after the style of the tribe or at best of the village community. Roman private property in land gave an impulse to the development of free individuality such as had always been impossible under the social stage of development known as the village community.

To teach history properly is to dispel this shallow illusion which flatters individualism and to open the eyes of the pupil to the true nature of freedom, namely, the freedom through obedience to just laws enforced by a strong government.

Your committee has made this apparent digression for the sake of a more explicit statement of its conviction of the importance of teaching history in a different spirit from that of abstract freedom, which sometimes means anarchy, although they admit the possibility of an opposite extreme, the danger of too little stress on the progressive element in the growth of nations and its manifestation in new and better political devices for representing all citizens without weakening the central power.

That the history of one's own nation is to be taught in the elementary school seems fixed by common consent. United States history includes first a sketch of the epoch of discoveries and next of the epoch of colonization. This fortunately suits the pedagogic requirements. For the child loves to approach the stern realities of a firmly established civilization through its stages of growth by means of individual enterprise. Here is the use of biography as introduction to history. It treats of exceptional individuals whose lives bring them in one way or another into national or even world historical relations. They throw light on the nature and necessity of governments, and are in turn illuminated by the light thrown back on them by the institutions which they promote or hinder. The era of semiprivate adventure with which American history begins is admirably adapted for study by the pupil in the elementary stage of his education. So, too, is the next epoch, that of colonization. The pioneer is a degree nearer to civilization than is the explorer and discoverer. In the colonial history the pupil interests himself in the enterprise of aspiring individualities, in their conquest over obstacles of climate and soil; their conflicts with the aboriginal population; their choice of land for settlement; the growth of their cities; above all, their several attempts and final success in forming a constitution securing local self-government. An epoch of growing interrelation of the colonies succeeds, a tendency to union on a large scale, due to the effect of European wars which involved England, France, and other countries, and affected the relations of their colonies in America. This epoch, too, abounds in heroic personalities, like Wolfe, Montcalm, and Washington, and perilous adventures, especially in the Indian warfare.

The fourth epoch is the Revolution, by which the Colonies through joint effort secured their independence and afterwards their union in a

nation. The subject grows rapidly more complex and tasks severely the powers of the pupils in the eighth year of the elementary school. The formation of the Constitution, and a brief study of the salient features of the Constitution itself, conclude the study of the portion of the history of the United States that is sufficiently remote to be treated after the manner of an educational classic. Everything up to this point stands out in strong individual outlines and is admirably fitted for that elementary course of study. Beyond this point the war of 1812 and the war of the rebellion, together with the political events that led to it, are matters of memory with the present generation of parents and grandparents, and are consequently not so well fitted for intensive study in school as the already classic period of our history. But these later and latest epochs may be and will be read at home not only in the text-book on history used in the schools, but also in the numerous sketches that appear in newspapers, magazines, and in more pretentious shapes. In the intensive study which should be undertaken of the classic period of our history the pupil may be taught the method appropriate to historical investigation, the many points of view from which each event ought to be considered. He should learn to discriminate between the theatrical show of events and the solid influences that move underneath as ethical causes. Although he is too immature for far-reaching reflections, he must be helped to see the causal processes of history. Armed with this discipline in historic methods, the pupil will do all of his miscellaneous reading and thinking in this province with more adequate intellectual reaction than was possible before the intensive study carried on in school.

The study of the outlines of the Constitution for ten or fifteen weeks in the final year of the elementary school has been found of great educational value. Properly taught, it fixes the idea of the essential threefoldness of the constitution of a free government and the necessary independence of each constituent power, whether legislative, judicial, or executive. This and some idea of the manner and mode of filling the official places in these three departments, and of the character of the duties with which each department is charged, lay foundations for an intelligent citizenship.

Besides this intensive study of the history of the United States in the seventh and eighth years, your committee would recommend oral lessons on the salient points of general history, taking a full hour of sixty minutes weekly—and preferably all at one time—for the sake of the more systematic treatment of the subject of the lesson and the deeper impression made on the mind of the pupil.

E. OTHER BRANCHES.

Your committee has reviewed the staple branches of the elementary course of study in the light of their educational scope and significance.

Grammar, literature, arithmetic, geography, and history are the five branches upon which the disciplinary work of the elementary school is concentrated. Inasmuch as reading is the first of the scholastic arts, it is interesting to note that the whole elementary course may be described as an extension of the process of learning the art of reading. First comes the mastering of the colloquial vocabulary in printed and script forms. Next come five incursions into the special vocabularies required (*a*) in literature to express the fine shades of emotion and the more subtle distinctions of thought, (*b*) the technique of arithmetic, (*c*) of geography, (*d*) of grammar, (*e*) and of history.

In the serious work of mastering these several technical vocabularies the pupil is assigned daily tasks that he must prepare by independent study. The class exercise or recitation is taken up with examining and criticising the pupil's oral statements of what he has learned, especial care being taken to secure the pupil's explanation of it in his own words. This requires paraphrases and definitions of the new words and phrases used in technical and literary senses, with a view to insure the addition to the mind of the new ideas corresponding to the new words. The misunderstandings are corrected and the pupil set on the way to use more critical alertness in the preparation of his succeeding lessons. The pupil learns as much by the recitations of his fellow-pupils as he learns from the teacher, but not the same things. He sees in the imperfect statements of his classmates that they apprehended the lesson with different presuppositions, and consequently have seen some phases of the subject that escaped his observation, while they in turn have missed points which he had noticed quite readily. These different points of view become more or less his own, and he may be said to grow by adding to his own mind the minds of others.

It is clear that there are other branches of instruction that may lay claim to a place in the course of study of the elementary school; for example, the various branches of natural science, vocal music, manual training, physical culture, drawing, etc.

Here the question of another method of instruction is suggested. There are lessons that require previous preparation by the pupil himself; there are also lessons that may be taken up without such preparation and conducted by the teacher, who leads the exercise and furnishes a large part of the information to be learned, enlisting the aid of members of the class for the purpose of bringing home the new material to their actual experience. Besides these, there are mechanical exercises for purposes of training, such as drawing, penmanship, and calisthenics.

In the first place, there is industrial and aesthetic drawing, which should have a place in all elementary school work. By it is secured the training of the hand and eye. Then, too, drawing helps in all the other branches that require illustration. Moreover, if used in the study of the great works of art in the way hereinbefore mentioned, it helps to cultivate the taste and prepares the future workman for a

more useful and lucrative career, inasmuch as superior taste commands higher wages in the finishing of all goods.

Natural science claims a place in the elementary school not so much as a disciplinary study side by side with grammar, arithmetic, and history, as a training in habits of observation and in the use of the technique by which such sciences are expounded. With a knowledge of the technical terms and some training in the methods of original investigation employed in the sciences, the pupil broadens his views of the world and greatly increases his capacity to acquire new knowledge; for the pupil who is unacquainted with the technique of science has to pass without mental profit the numerous scientific allusions and items of information which more and more abound in all our literature, whether of an ephemeral or a permanent character. In an age whose proudest boast is the progress of science in all domains, there should be in the elementary school, from the first, a course in the elements of sciences. And this is quite possible, for each science possesses some phases that lie very near to the child's life. These familiar topics furnish the doors through which the child enters the various special departments. Science, it is claimed, is nothing if not systematic. Indeed, science itself may be defined as the interpretation of each fact through all other facts of a kindred nature. Admitting that this is so, it is no less true that pedagogic method begins with the fragmentary knowledge possessed by the pupil and proceeds to organize it and build it out systematically in all directions. Hence any science may be taken up best on the side nearest the experience of the pupil and the investigation continued until the other parts are reached. Thus the pedagogical order is not always the logical or scientific order. In this respect it agrees with the order of discovery, which is usually something quite different from the logical order, for that is the last thing discovered. The natural sciences have two general divisions, one relating to inorganic matter, as physics and chemistry, and one relating to organic, as botany and zoology. There should be a spiral course in natural science, commencing each branch with the most interesting phases to the child. A first course should be given in botany, zoology, and physics, so as to treat of the structure and uses of familiar plants and animals, and the explanation of physical phenomena as seen in the child's playthings, domestic machines, etc. A second course covering the same subjects, but laying more stress on classification and functions, will build on to the knowledge already acquired from the former lessons and from his recently acquired experience. A third course of weekly lessons, conducted by the teacher as before in a conversational style, with experiments and with a comparison of the facts of observation already in the possession of the children, will go far to helping them to an acquisition of the results of natural science. Those of the children specially gifted for observation in some one or more departments of nature will be stimulated and encouraged to make the most of their gifts.

In the opinion of your committee, there should be set apart a full hour each week for drawing and the same amount for oral lessons in natural science.

The oral lessons in history have already been mentioned. The spiral course, found useful in natural science because of the rapid change in capacity of comprehension by the pupil from his sixth to his fourteenth year, will also be best for the history course, which will begin with biographical adventures of interest to the child and possessing an important historical bearing. These will proceed from the native land first to England, the parent country, and then to the classic civilizations (Greece and Rome being, so to speak, the grandparent countries of the American Colonies). These successive courses of oral lessons adapted respectively to the child's capacity will do much to make the child well informed on this topic. Oral lessons should never be mere lectures, but more like Socratic dialogues, building up a systematic knowledge partly from what is already known, partly by new investigations, and partly by comparison of authorities.

The best argument in favor of weekly oral lessons in natural science and general history is the actual experiences of teachers who have for sometime used the plan. It has been found that the lessons in botany, zoology, and physics give the pupil much aid in learning his geography and other lessons relating to nature, while the history lessons assist very much his comprehension of literature and add interest to geography.

It is understood by your committee that the lessons in physiology and hygiene (with special reference to the effects of stimulants and narcotics) required by State laws should be included in this oral course in natural science. Manual training, so far as the theory and use of the tools for working in wood and iron are concerned, has just claims on the elementary school for a reason similar to that which admits natural science. From science have proceeded useful inventions for the aid of all manner of manufactures and transportation. The child of to-day lives in a world where machinery is constantly at his hand. A course of training in wood and iron work, together with experimental knowledge of physics or natural philosophy, makes it easy for him to learn the management of such machines. Sewing and cookery have not the same but stronger claims for a place in school. One-half day in each week for one-half a year each in the seventh and eighth grades will suffice for manual training, the sewing and cookery being studied by the girls and the wood and iron work by the boys. It should be mentioned, however, that the advocates of manual training in iron and wood work recommend these branches for secondary schools, because of the greater maturity of body and the less likelihood to acquire wrong habits of manipulation in the third period of four years of school.

Vocal music has long since obtained a well-established place in all elementary schools. The labors of two generations of special teachers

have reduced the steps of instruction to such simplicity that whole classes may make as regular progress in reading music as in reading literature.

In regard to physical culture your committee is agreed that there should be some form of special daily exercises amounting in the aggregate to one hour each week, the same to include the main features of calisthenics and German, Swedish, or American systems of physical training, but not to be regarded as a substitute for the old-fashioned recess established to permit the free exercise of the pupils in the open air. Systematic physical training has for its object rather the will training than recreation, and this must not be forgotten. To go from a hard lesson to a series of calisthenic exercises is to go from one kind of will training to another. Exhaustion of the will should be followed by the caprice and wild freedom of the recess. But systematic physical exercise has its sufficient reason in its aid to a graceful use of the limbs, its development of muscles that are left unused or rudimentary unless called forth by special training, and for the help it gives to the teacher in the way of school discipline.

Your committee would mention in this connection instruction in morals and manners, which ought to be given in a brief series of lessons each year with a view to build up in the mind a theory of the conventionalities of polite and pure minded society. If these lessons are made too long or too numerous they are apt to become offensive to the child's mind. It is of course understood by your committee that the substantial moral training of the school is performed by the discipline rather than by the instruction in ethical theory. The child is trained to be regular and punctual, and to restrain his desire to talk and whisper—in these things gaining self-control day by day. The essence of moral behavior is self-control. The school teaches good behavior. The intercourse of a pupil with his fellows without evil words or violent actions is insisted on and secured. The higher moral qualities of truth telling and sincerity are taught in every class exercise that lays stress on accuracy of statement.

Your committee has already discussed the importance of teaching something of algebraic processes in the seventh and eighth grades, with the view to obtaining better methods of solving problems in advanced arithmetic. A majority of your committee are of the opinion that formal English grammar should be discontinued in the eighth year and the study of some foreign language, preferably that of Latin, substituted. The educational effect on an English-speaking pupil of taking up a language which, like Latin, uses inflections instead of prepositions, and which further differs from English by the order in which its words are arranged in the sentence, is quite marked, and a year of Latin places a pupil by a wide interval out of the range of the pupil who has continued English grammar without taking up Latin. But the effect of the year's study of Latin increases the youth's power of

apperception in very many directions by reason of the fact that so much of the English vocabulary used in technical vocabularies, like those of geography, grammar, history, and literature, is from a Latin source, and besides there are so many traces in the form and substance of human learning of the hundreds of years when Latin was the only tongue in which observation and reflection could be expressed.

Your committee refers to the programme given later in this report for the details of coordinating these several branches already recommended.

THE DIFFERENCE BETWEEN ELEMENTARY AND SECONDARY STUDIES.

In recommending the introduction of algebraic processes in the seventh and eighth years, as well as in the recommendation just now made to introduce Latin in the eighth year of the elementary course, your committee has come face to face with the question of the intrinsic difference between elementary and secondary studies.

Custom has placed algebra, geometry, the history of English literature, and Latin in the rank of secondary studies; also general history, physical geography, and the elements of physics and chemistry. In a secondary course of four years trigonometry may be added to the mathematics; some of the sciences whose elements are used in physical geography may be taken up separately in special treatises, as geology, botany, and physiology. There may be also a study of whole works of English authors, as Shakespeare, Milton, and Scott. Greek is also begun in the second or third year of the secondary course. This is the custom in most public high schools; but in private secondary schools Latin is begun earlier, and so, too, Greek, algebra, and geometry. Sometimes geometry is taken up before algebra, as is the custom in German schools. These arrangements are based partly on tradition, partly on the requirements of higher institutions for admission, and partly on the ground that the intrinsic difficulties in these studies have fixed their places in the course of study. Of those who claim that there is an intrinsic reason for the selection and order of these studies some base their conclusions on experience in conducting pupils through them, others on psychological grounds. The latter contend, for example, that algebra deals with general forms of calculation, while arithmetic deals with the particular instances of calculation. Whatever deals with the particular instance is relatively elementary; whatever deals with the general form is relatively secondary. In the expression $a + b = c$ algebra indicates the form of all addition. This arithmetic can not do, except in the form of a verbal rule describing the steps of the operation; its examples are all special instances falling under the general form given in algebra. If, therefore, arithmetic is an elementary branch, algebra is relatively to it a secondary branch. So, too, geometry, though not directly based on arithmetic, has to presuppose an acquaintance with it when it reduces spatial functions into numerical forms, as,

for example, in the measurement of surfaces and solids and in ascertaining the ratio of the circumference to the radius and of the hypotenuse to the two other sides of the right-angled triangle. Geometry, moreover, deals with necessary relations. Its demonstrations reach universal and necessary conclusions, holding good not merely in such material shapes as we have met with in actual experience, but with all examples possible, past, present, or future. Such knowledge transcending experience is intrinsically secondary as compared with the first acquaintance with geometric shapes in concrete examples.

In the case of geometry it is claimed by some that what is called "inventional geometry" may be properly introduced into the elementary grades. By this some mean the practice with blocks in the shape of geometric solids and the construction of different figures from the same; others mean the rediscovery by the pupil for himself of the necessary relations demonstrated by Euclid. The former—exercises of construction with blocks—are well enough in the kindergarten, where they assist in learning number, as well as in the analysis of material forms. But its educational value is small for pupils advanced into the use of books. The original discovery of Euclid's demonstrations, on the other hand, belongs more properly to higher education than to elementary. In the geometrical text-books recently introduced into secondary schools there is so much of original demonstration required that the teacher is greatly embarrassed on account of the differences in native capacity for mathematics that develop among the pupils of the same class in solving the problems of invention. A few gifted pupils delight in the inventions, and develop rapidly in power, while the majority of the class use too much time over them, and thus rob the other branches of the course of study, or else fall into the bad practice of getting help from others in the preparation of their lessons. A few in every class fall hopelessly behind and are discouraged. The result is an attempt on the part of the teacher to correct the evil by requiring a more thorough training in the mathematical studies preceding, and the consequent delay of secondary pupils in the lower grades of the course in order to bring up their "inventional geometry." Many, discouraged, fail to go on; many more fail to reach higher studies because unable to get over the barrier unnecessarily placed before them by teachers who desire that no pupils except natural geometers shall enter into higher studies.

Physical geography in its scientific form is very properly made a part of the secondary course of study. The pupil in his ninth year of work can profitably acquire the scientific technique of geology, botany, zoology, meteorology, and ethnology, and in the following years take up those sciences separately and push them further, using the method of actual investigation. The subject-matter of physical geography is of very high interest to the pupil who has studied geography in the elementary grades after an approved method. It takes up the proxi-

mate grounds and causes for the elements of difference on the earth's surface, already become familiar to him through his elementary studies, and pushes them back into deeper, simpler, and more satisfactory principles. This study performs the work also of correlating the sciences that relate to organic nature by showing their respective uses to man. From the glimpses which the pupil gets of mineralogy, geology, botany, zoology, ethnology, and meteorology in their necessary connection as geographic conditions he sees the scope and grand significance of those separate inquiries. A thirst is aroused in him to pursue his researches into their domains. He sees, too, the borderlands in which new discoveries may be made by the enterprising explorer.

Physics, including what was called until recently "natural philosophy," after Newton's *Principia* (*Philosophiæ Naturalis Principia Mathematica*), implies more knowledge of mathematics for its thorough discussion than the secondary pupil is likely to possess. In fact, the study of this branch in college thirty years ago was crippled by the same cause. It should follow the completion of analytical geometry. Notwithstanding this, a very profitable study of this subject may be made in the second year of the high school or preparatory school, although the formulas can then be understood in so far as they imply elementary algebra only. The pupil does not get the most exact notions of the quantitative laws that rule matter in its states of motion and equilibrium, but he does see the action of forces as qualitative elements of phenomena and understand quite well the mechanical inventions by which men subdue them for his use and safety. Even in the elementary grades the pupil can seize very many of these qualitative aspects and learn the explanation of the mechanical phenomena of nature, and other applications of the same principles in invention, as, for example, gravitation in falling bodies; its measurement by the scales; the part it plays in the pump, the barometer, the pendulum; cohesion in mud, clay, glue, paste, mortar, cement, etc.; capillary attraction in lamp wicks, sponges, sugar, the sap in plants; the applications of lifting by the lever, pulley, inclined plane, wedge, and screw; heat in the sun, combustion, friction, steam, thermometer, conduction, clothing, cooking, etc.; the phenomena of light, electricity, magnetism, and the explanation of such mechanical devices as spectacles, telescopes, microscopes, prisms, photographic cameras, electric tension in bodies, lightning, mariner's compass, horseshoe magnet, the telegraph, the dynamo. This partially qualitative study of forces and mechanical inventions has the educational effect of enlightening the pupil and emancipating him from the network of superstition that surrounds him in the child world, partly of necessity and partly by reason of the illiterate adults that he sometimes meets with in the persons of nurses, servants, and tradespeople, whose occupations have more attraction for him than those of cultured people. The fairy world is a world of magic, of immediate interventions of supernatural spiritual beings,

and while this is proper enough for the child up to the time of the school, and in a lessening degree for some time after, it is only negative and harmful in adult manhood and womanhood. It produces arrested development of powers of observation and reflection in reference to phenomena and stops the growth of the soul at the infantine stage of development. Neither is this infantine stage of wonder and magic more religious than the stage of disillusion through the study of mathematics and physics. It is the arrest of religious development also at the stage of fetichism. The highest religion, that of pure Christianity, sees in the world infinite mediations, all for the purpose of developing independent individuality; the perfection of human souls not only in one kind of piety, namely, that of the heart, but in the piety of the intellect that beholds truth, the piety of the will that does good deeds wisely, the piety of the senses that sees the beautiful and realizes it in works of art. This is the Christian idea of divine Providence as contrasted with the heathen idea of that Providence, and the study of natural philosophy is an essential educational requisite in its attainment, although a negative means. Of course there is danger of replacing the spiritual idea of the divine by the dynamical or mechanical idea and thus arresting the mind at the stage of pantheism instead of fetichism. But this danger can be avoided by further education through secondary into higher education, whose entire spirit and method are comparative and philosophical in the best sense of the term. For higher education seems to have as its province the correlation of the several branches of human learning in the unity of the spiritual view furnished by religion to our civilization. By it one learns to see each branch, each science or art or discipline, in the light of all the others. This higher or comparative view is essential to any completeness of education, for it alone prevents the one-sidedness of hobbies, or "fads," as they are called in the slang of the day. It prevents also the bad effects that flow from the influence of what are termed "self-educated men," who for the most part carry up with them elementary methods of study, or at best secondary methods, which accentuate the facts and relations of natural and spiritual phenomena, but do not deal with their higher correlations. The comparative method can not, in fact, be well introduced until the student is somewhat advanced and has already completed his elementary course of study, dealing with the immediate aspects of the world, and his secondary course, dealing with the separate formal and dynamical aspects that lie next in order behind the facts of first observation. Higher education in a measure unifies these separate formal and dynamic aspects, corrects their one-sidedness, and prevents the danger of what is so often noted in the self-educated men who unduly exaggerate some one of the subordinate aspects of the world and make it a sort of first principle.

Here your committee finds in its way the question of the use of the full scientific method in the teaching of science in the elementary school. The true method has been called the method of investigation, but that method as used by the child is only a sad caricature of the method used by the mature scientific man, who has long since passed through the fragmentary observation and reflection that prevail in the period of childhood, as well as the tendencies to exaggeration of the importance of one or another branch of knowledge at the expense of the higher unity that correlates all; an exaggeration that manifests itself in the possession and use of a hobby. The ideal scientific man has freed himself from obstacles of this kind, whether psychological or objective. What astronomical observers call the subjective coefficient must be ascertained and eliminated from the record that shows beginnings, endings, and rates. There is a possibility of perfect specialization in a scientific observer only after the elementary and secondary attitudes of mind have been outgrown. An attempt to force the child into the full scientific method by specialization would cause an arrest of his development in the other branches of human learning outside of his specialty. He could not properly inventory the data of his own special sphere unless he knew how to recognize the defining limits or boundaries that separate his province from its neighbors. The early days of science abounded in examples of confusion of provinces in the inventories of their data. It is difficult, even now, to decide where physics and chemistry leave off and biology begins.

Your committee does not attempt to state the exact proportion in which the child, at his various degrees of advancement, may be able to dispense with the guiding influence of teacher and text-book in his investigations, but they protest strongly against the illusion under which certain zealous advocates of the early introduction of scientific method seem to labor. They ignore in their zeal the deduction that is to be made for the guiding hand of the teacher, who silently furnishes to the child the experience that he lacks and quietly directs his special attention to this or to that phase and prevents him from hasty or false generalization, as well as from undue exaggeration of single facts or principles. Here the teacher adds the needed scientific outlook which the child lacks, but which the mature scientist possesses for himself.

It is contended by some that the scientific frame of mind is adapted only to science, but not to art, literature, and religion, which have something essential that science does not reach; not because of the incompleteness of the sciences themselves, but because of the attitude of the mind assumed in the observation of nature. In analytic investigation there is isolation of parts one from another, with a view to find the sources of the influences which produce the phenomena shown in the object. The mind brings everything to the test of this idea. Every phenomenon that exists comes from beyond itself, and analysis will be able to trace the source.

Now, this frame of mind, which insists on a foreign origin of all that goes to constitute an object, debars itself in advance from the province of religion, art, and literature, as well as of philosophy. For self-determination personal activity is the first principle assumed by religion, and it is tacitly assumed by art and literature, classic and Christian. The very definition of philosophy implies this, for it is the attempt to explain the world by the assumption of a first principle, and to show that all classes of objects imply that principle as ultimate presupposition. According to this view it is important not to attempt to hasten the use of a strictly scientific method on the part of the child. In his first years he is acquiring the results of civilization rather as an outfit of habits, usages, and traditions than as a scientific discovery. He can not be expected to stand over against the culture of his time and challenge one and all of its conventionalities to justify themselves before his reason. His reason is too weak. He is rather in the imitation stage of mind than in that of criticism. He will not reach the comparative or critical method until the era of higher education.

However this may be, it is clear that the educational value of science and its method is a very important question, and that on it depends the settlement of the question where specialization may begin. To commence the use of the real scientific method would imply a radical change also in methods from the beginning. This may be realized by considering the hold which even the kindergarten retains upon symbolism and upon art and literature. But in the opinion of a majority of your committee natural science itself should be approached, in the earliest years of the elementary school, rather in the form of results, with glimpses into the methods by which these results were reached. In the last two years (the seventh and eighth) there may be some strictness of scientific form and an exhibition of the method of discovery. The pupil, too, may to some extent put this method in practice himself. In the secondary school there should be some laboratory work. But the pupil can not be expected to acquire for himself fully the scientific method of dealing with nature until the second part of higher education—its post-graduate work. Nevertheless this good should be kept in view from the first year of the elementary school and there should be a gradual and continual approach to it.

In the study of general history appears another branch of the secondary course. History of the native land is assumed to be an elementary study. History of the world is certainly a step further away from the experience of the child. It is held by some teachers to be in accordance with proper method to begin with the foreign relations of one's native land and to work outward to the world history. The European relations involved in the discovery and colonization of America furnish the only explanation to a multitude of questions that the pupil has started in the elementary school. He should move out-

ward from what he has already learned, by the study of a new concentric circle of grounds and reasons, according to this view. This, however, is not the usual course taken. On beginning secondary history the pupil is set back face to face with the period of tradition, just when historic traces first make their appearance. He is by this arrangement broken off from the part of history that he has become acquainted with and made to grapple with that period which has no relation to his previous investigations. It is to be said, however, that general history lays stress on the religious thread of connection, though less now than formerly. The world history is a conception of the great Christian thinker, St. Augustine, who held that the world and its history is a sort of antiphonic hymn in which God reads his counsels and the earth and man read the responses. He induced Orosius, his pupil, to sketch a general history in the spirit of his view. It was natural that the Old Testament histories, and especially the chapters of Genesis, should furnish the most striking part of its contents. This general history was connected with religion and brought closer to the experience of the individual than the history of his own people. To commence history with the Garden of Eden, the Fall of Man, and the Noachian Deluge was to begin with what was most familiar to all minds, and most instructive, because it concerned most nearly the conduct of life. Thus religion furnished the apperceptive material by which the early portions of history were recognized, classified, and made a part of experience.

Now that studies in archæology, especially those in the Nile and Euphrates valleys, are changing the chronologies and the records of early times and adding new records of the past, bringing to light national movements and collisions of peoples, together with data by which to determine the status of their industrial civilization, their religious ideas, and the form of their literature and art, the concentric arrangement of all this material around the history of the chosen people as a nucleus is no longer possible. The question has arisen, therefore, whether general history should not be rearranged for the secondary school and made to connect with American history for apperceptive material rather than with Old Testament history. To this it has been replied with force that the idea of a world history, as St. Augustine conceived it, is the noblest educative ideal ever connected with the subject of history. Future versions of general history will not desert this standpoint, we are told, even if they take as their basis that of ethnology and anthropology, for these, too, will exhibit a plan in human history—an educative principle that leads nations toward freedom and science, because the Creator of nature has made it, in its fundamental constitution, an evolution or progressive development of individuality. Thus the idea of divine Providence is retained, though made more comprehensive by bringing the whole content of natural laws within his will as his method of work.

These considerations, we are reminded by the partisans of humanity studies, point back to the educative value of history as corrective of the one-sidedness of the method of science. Science seeks explanation in the mechanical conditions of and impulses received from the environment, while history keeps its gaze fixed on human purposes and studies the genesis of national actions through the previous stages of feelings, convictions, and conscious ideas. In history the pupil has for his object self-activity, reaction against environment, instead of mechanism, or activity through another.

The history of English literature is another study of the secondary school. It is very properly placed beyond the elementary school, for as taught it consists largely of the biographies of men of letters. The pupils who have not yet learned any great work of literature should not be pestered with literary biography, for at that stage the greatness of the men of letters can not be seen. Plutarch makes great biographies because he shows heroic struggles and great deeds. The heroism of artists and poets consists in sacrificing all for the sake of their creations. The majority of them come off sadly at the hands of the biographer for the reason that the very sides of their lives are described which they had slighted and neglected for the sake of the Muses. The prophets of Israel did not live in city palaces, but in caves; they did not wear fine raiment nor feed sumptuously nor conform to the codes of polite society. They were not courtiers when they approached the King. They neglected all the other institutions—family, productive industry, and state—for the sake of one, the church, and even that not the established ceremonial of the people, but a higher and more direct communing with Jehovah. So with artists and men of letters it is more or less the case that the institutional side of their lives is neglected or unsymmetrical, or if this is not the case it will be found prosaic and uneventful, throwing no light on their matchless productions.

For these reasons should not the present use of literary biography as it exists in secondary schools and is gradually making its way into elementary schools be discouraged and the time now given to it devoted to the study of literary works of art? It will be admitted that the exposure of the foibles of artists has an immoral tendency on youth; for example, one affects to be a poet and justifies laxity and self-indulgence through the example of Byron. Those who support this view hold that we should not dignify the immoral and defective side of life by making it a branch of study in school.

CORRELATION BY SYNTHESIS OF STUDIES.

Your committee would mention another sense in which the expression correlation of studies is sometimes used. It is held by advocates of an artificial center of the course of study. They use, for example, De Foe's Robinson Crusoe for a reading exercise and connect with it the lessons in geography and arithmetic. It has been pointed out by

critics of this method that there is always danger of covering up the literary features of the reading matter under accessories of mathematics and natural science. If the material for other branches is to be sought for in connection with the literary exercise it will distract the attention from the poetic unity. On the other hand, arithmetic and geography can not be unfolded freely and comprehensively if they are to wait on the opportunities afforded in a poem or novel for their development. A correlation of this kind, instead of being a deeper correlation, such as is found in all parts of human learning by the studies of the college and university, is rather a shallow and uninteresting kind of correlation that reminds one of the system of mnemonics, or artificial memory, which neglects the association of facts and events with their causes and the history of their evolution, and looks for unessential quips, puns, or accidental suggestions with a view to strengthening the memory. The effect of this is to weaken the power of systematic thinking, which deals with essential relations, and substitute for it a chaotic memory that ties together things through false and seeming relations, not of the things and events, but of the words that denote them.

The correlation of geography and arithmetic and history in and through the unity of a work of fiction is at best an artificial correlation, which will stand in the way of the true objective correlation. It is a temporary scaffolding made for school purposes. Instruction should avoid such temporary structures as much as possible, and when used they should be only used for the day and not for the year, because of the danger of building up an apperceptive center in the child's mind that will not harmonize with the true apperceptive center required by the civilization. The story of Robinson Crusoe has intense interest to the child as a lesson in sociology, showing him the helplessness of isolated man and the reenforcement that comes to him through society. It shows the importance of the division of labor. All children should read this book in the later years of the elementary course, and a few profitable discussions may be had in school regarding its significance. But De Foe painted in it only the side of adventure that he found in his countrymen in his epoch, England after the defeat of the Armada having taken up a career of conquest on the seas, ending by colonization and a world commerce. The liking for adventure continues to this day among all Anglo-Saxon peoples, and beyond other nationalities there is in English-speaking populations a delight in building up civilization from the very foundation. This is only, however, one phase of the Anglo-Saxon mind. Consequently the history of Crusoe is not a proper center for a year's study in school. It omits cities, governments, the world commerce, the international process, the church, the newspaper, and the book from view, and they are not even reflected in it.

Your committee would call attention in this connection to the importance of the pedagogical principle of analysis and isolation as preced-

ing synthesis and correlation. There should be rigid isolation of the elements of each branch for the purpose of getting a clear conception of what is individual and peculiar in a special province of learning. Otherwise one will not gain from each its special contribution to the whole. That there is some danger from the kind of correlation that essays to teach all branches in each will be apparent from this point of view.

III. THE SCHOOL PROGRAMME.

In order to find a place in the elementary school for the several branches recommended in this report, it will be necessary to use economically the time allotted for the school term, which is about two hundred days, exclusive of vacations and holidays. Five days per week and five hours of actual school work or a little less per day, after excluding recesses for recreation, give about twenty-five hours per week. There should be, as far as possible, alternation of study hours and recitations (the word recitation being used in the United States for class exercise or lesson conducted by the teacher and requiring the critical attention of the entire class). Those studies requiring the clearest thought should be taken up, as a usual thing, in the morning session, say arithmetic the second half hour of the morning and grammar the half hour next succeeding the morning recess for recreation in the open air. By some who are anxious to prevent study at home, or at least to control its amount, it is thought advisable to place the arithmetic lesson after the grammar lesson, so that the study learned at home will be grammar instead of arithmetic. It is found by experience that if mathematical problems are taken home for solution two bad habits arise, namely: In one case the pupil gets assistance from his parents or others, and thereby loses to some extent his own power of overcoming difficulties by brave and persistent attacks unaided by others; the other evil is a habit of consuming long hours in the preparation of a lesson that should be prepared in thirty minutes, if all the powers of mind are fresh and at command. An average child may spend three hours in the preparation of an arithmetic lesson. Indeed, in repeated efforts to solve one of the so-called "conundrums," a whole family may spend the entire evening. One of the unpleasant results of the next day is that the teacher who conducts the lesson never knows the exact capacity and rate of progress of his pupils; in the recitation he probes the knowledge and preparation of the pupil, plus an unknown amount of preparatory work borrowed from parents and others. He even increases the length of the lessons, and requires more work at home, when the amount already exceeds the unaided capacity of the pupil.

The lessons should be arranged so as to bring in such exercises as furnish relief from intellectual tension between others that make large demands on the thinking powers. Such exercises as singing and calis-

thenics, writing and drawing, also reading, are of the nature of a relief from those recitations that tax the memory, critical alertness, and introspection, like arithmetic, grammar, and history.

Your committee has not been able to agree on the question whether pupils who leave school early should have a course of study different from the course of those who are to continue on into secondary and higher work. It is contended, on the one hand, that those who leave early should have a more practical course, and that they should dispense with those studies that seem to be in the nature of preparatory work for secondary and higher education. Such studies as algebra and Latin, for example, should not be taken up unless the pupil expects to pursue the same for a sufficient time to complete the secondary course. It is replied, on the other hand, that it is best to have one course for all, because any school education is at best but an initiation for the pupil into the art of learning, and that wherever he leaves off in his school course he should continue, by the aid of the public library and home study, in the work of mastering science and literature. It is further contended that a brief course in higher studies, like Latin and algebra, instead of being useless, is of more value than any elementary studies that might replace them. The first ten lessons in algebra give the pupil the fundamental idea of the general expression of arithmetical solutions by means of letters and other symbols. Six months' study of it gives him the power to use the method in stating the manifold conditions of a problem in partnership, or in ascertaining a value that depends on several transformations of the data given. It is claimed, indeed, that the first few lessons in any branch are relatively of more educational value than an equal number of subsequent lessons, because the fundamental ideas and principles of the new study are placed at the beginning. In Latin, for instance, the pupil learns in his first week's study the to him strange phenomenon of a language that performs by inflections what his own language performs by the use of prepositions and auxiliaries. He is still more surprised to find that the order of words in a sentence is altogether different in Roman usage from that to which he is accustomed. He further begins to recognize in the Latin words many roots or stems which are employed to denote immediate sensuous objects, while they have been adopted into his English tongue to signify fine shades of distinction in thought or feeling. By these three things his powers of observation in matters of language are armed, as it were, with new faculties. Nothing that he has hitherto learned in grammar is so radical and far-reaching as what he learns in his first week's study of Latin. The Latin arrangement of words in a sentence indicates a different order of mental arrangement in the process of apprehension and expression of thought. This arrangement is rendered possible by declensions. This amounts to attaching prepositions to the ends of the words, which they thus convert into adjectival or adverbial modifiers; whereas the

separate prepositions of the English must indicate by their position in the sentence their grammatical relation. These observations, and the new insight into the etymology of English words having a Latin derivation, are of the nature of mental seeds which will grow and bear fruit throughout life in the better command of one's native tongue. All this will come from a very brief time devoted to Latin in school.

AMOUNT OF TIME FOR EACH BRANCH.

Your committee recommends that an hour of sixty minutes each week be assigned in the programme for each of the following subjects throughout the eight years: Physical culture, vocal music, oral lessons in natural science (hygiene to be included among the topics under this head), oral lessons in biography and general history, and that the same amount of time each week shall be devoted to drawing from the second year to the eighth, inclusive; to manual training during the seventh and eighth years so as to include sewing and cookery for the girls and work in wood and iron for the boys.

Your committee recommends that reading be given at least one lesson each day for the entire eight years, it being understood, however, that there shall be two or more lessons each day in reading in the first and second years, in which the recitation is necessarily very short, because of the inability of the pupil to give continued close attention, and because he has little power of applying himself to the work of preparing lessons by himself. In the first three years the reading should be limited to pieces in the colloquial style, but selections from the classics of the language in prose and in poetry shall be read to the pupil from time to time, and discussions made of such features of the selections read as may interest the pupil. After the third year your committee believes that the reading lesson should be given to selections from classic authors of English, and that the work of the recitation should be divided between (*a*) the elocution, (*b*) the grammatical peculiarities of the language, including spelling, definitions, syntactical construction, punctuation, and figures of prosody, and (*c*) the literary contents, including the main and accessory ideas, the emotions painted, the deeds described, the devices of style to produce a strong impression on the reader. Your committee wishes to lay emphasis on the importance of the last item—that of literary study—which should consume more and more of the time of the recitation from grade to grade in the period from the fourth to the eighth year. In the fourth year and previously the first item—that of elocution, to secure distinct enunciation and correct pronunciation—should be most prominent. In the fifth and sixth years the second item—that of spelling, defining, and punctuation—should predominate slightly over the other two items. In the years from the fifth to the eighth there should be some reading of entire stories, such as *Gulliver's Travels*, *Robinson Crusoe*, *Rip Van Winkle*, *The Lady of the Lake*, *Hiawatha*, and similar stories adapted

in style and subject-matter to the capacity of the pupils. An hour should be devoted each week to conversations on the salient points of the story, its literary and ethical bearings.

Your committee agrees in the opinion that in teaching language care should be taken that the pupil practices much in writing exercises and original compositions. At first the pupil will use only his colloquial vocabulary, but as he gains command of the technical vocabularies of geography, arithmetic, and history, and learns the higher literary vocabulary of his language, he will extend his use of words accordingly. Daily from the first year the child will prepare some lesson or portion of a lesson in writing. Your committee has included under the head of oral grammar (from the first to the middle of the fifth year) one phase of this written work devoted to the study of the literary form and the technicalities of composition in such exercises as letter writing, written reviews of the several branches studied, reports of the oral lessons in natural science and history, paraphrases of the poems and prose literature of the readers, and finally compositions or written essays on suitable themes assigned by the teacher, but selected from the fields of knowledge studied in school. Care should be taken to criticise all paraphrases of poetry in respect to the good or bad taste shown in the choice of words; parodies should never be permitted.

It is thought by your committee that the old style of composition writing was too formal. It was kept too far away from the other work of the pupil. Instead of giving a written account of what he had learned in arithmetic, geography, grammar, history, and natural science, the pupil attempted artificial descriptions and reflections on such subjects as "Spring," "Happiness," "Perseverance," "Friendship," or something else outside of the line of his school studies.

Your committee has already expressed its opinion that a good English style is not to be acquired by the study of grammar so much as by familiarity with great masterpieces of literature. We especially recommend that pupils who have taken up the fourth and fifth readers, containing the selections from great authors, should often be required to make written paraphrases of prose or poetic models of style, using their own vocabulary to express the thoughts so far as possible, and borrowing the *recherché* words and phrases of the author where their own resources fail them. In this way the pupil learns to see what the great author has done to enrich the language and to furnish adequate means of expression for what could not be presented in words before, or at least not in so happy a manner.

Your committee believes that every recitation is, in one aspect of it, an attempt to express the thoughts and information of the lesson in the pupil's own words, and thus an initial exercise in composition. The regular weekly written review of the important topics in the several branches studied is a more elaborate exercise in composition, the pupil endeavoring to collect what he knows and to state it systematically and

in proper language. The punctuation, spelling, syntax, penmanship, choice of words, and style should not, it is true, be made a matter of criticism in connection with the other lessons, but only in the language lesson proper. But the pupil will learn language, all the same, by the written and oral recitations. The oral grammar lessons, from the first year to the middle of the fifth year, should deal chiefly with the use of language, gradually introducing the grammatical technique as it is needed to describe accurately the correct forms and the usages violated.

Your committee believes that there is some danger of wasting the time of the pupil in these oral and written language lessons in the first four years by confining the work of the pupil to the expression of ordinary commonplace ideas not related to the subjects of his other lessons, especially when the expression is confined to the colloquial vocabulary. Such training has been severely and justly condemned as teaching what is called prating or gabbling, rather than a noble use of English speech. It is clear that the pupil should have a dignified and worthy subject of composition, and what is so good for his purpose as the themes he has tried to master in his regular lessons? The reading lessons will give matter for literary style, the geography for scientific style, and the arithmetic for a business style; for all styles should be learned.

Your committee recommends that selected lists of words difficult to spell be made from the reading lessons and mastered by frequent writing and oral spelling during the fourth, fifth, and sixth years.

Your committee recommends that the use of a text-book in grammar begin with the second half of the fifth year, and continue until the beginning of the study of Latin in the eighth grade, and that 1 daily lesson of twenty-five or thirty minutes be devoted to it.

For Latin we recommend 1 daily lesson of thirty minutes for the eighth year. For arithmetic we recommend number work from the first year to the eighth, 1 lesson each day, but the use of the text-book in number should not, in our opinion, begin until the first quarter of the third year. We recommend that the applications of elementary algebra to arithmetic, as hereinbefore explained, be substituted for pure arithmetic in the seventh and eighth years, a daily lesson being given.

Your committee recommends that penmanship as a separate branch be taught in the first six years at least 3 lessons per week.

Geography, in the opinion of your committee, should begin with oral lessons in the second year, and with a text-book in the third quarter of the third year, and be continued to the close of the sixth year with 1 lesson each day, and in the seventh and eighth years with 3 lessons per week.

History of the United States, with the use of a text-book, your committee recommends for the seventh and the first half of the eighth year, 1 lesson each day; the Constitution of the United States for the third quarter of the eighth year.

The following schedule will show the number of lessons per week for each quarter of each year:

Reading: Eight years, with daily lessons.

Pennmanship. Six years, 10 lessons per week for first two years, 5 for third and fourth, and 3 for fifth and sixth.

Spelling lists: Fourth, fifth, and sixth years, 4 lessons per week.

Grammar: Oral, with composition or dictation, first year to middle of fifth year, text-book from middle of fifth year to close of seventh year, 5 lessons per week. (Composition writing should be included under this head. But the written examinations on the several branches should be counted under the head of composition work.)

Latin or French or German: Eighth year, 5 lessons per week.

Arithmetic: Oral first and second years, text-book third to sixth years, 5 lessons per week.

Algebra: Seventh and eighth years, 5 lessons per week.

Geography: Oral lessons second year to middle of third year, text-book from middle of third year, 5 lessons weekly to seventh year, and 3 lessons to close of eighth.

Natural science and hygiene: Sixty minutes per week, eight years.

History of United States: Five hours per week seventh year and first half of eighth year.

Constitution of United States: Third quarter in the eighth year.

General history and biography: Oral lessons, sixty minutes a week, eight years.

Physical culture: Sixty minutes a week, eight years.

Vocal music: Sixty minutes a week, eight years.

Drawing: Sixty minutes a week, eight years.

Manual training, sewing, and cooking: One-half day each week in seventh and eighth years.

Your committee recommends recitations of fifteen minutes in length in the first and second years, of twenty minutes in length in the third and fourth years, of twenty-five minutes in the fifth and sixth years, and of thirty minutes in the seventh and eighth.

The results of this programme show for the first and second years 20 lessons a week of fifteen minutes each, besides 7 other exercises, occupying an average of twelve minutes apiece each day; the total amount of time occupied in the continuous attention of the recitation or class exercises being twelve hours, or an average of two hours and twenty-four minutes per day.

For the third year 20 lessons a week of twenty minutes each, and 5 general exercises taking up five hours a week, or an average of one hour per day, giving an average time per day of two hours and twenty minutes for class recitations or exercises.

In the fourth the recitations increase to 24 (by reason of 4 extra lessons in spelling) and the time occupied in recitations and exercises to thirteen hours and an average per day of two hours and thirty-six minutes.

Branches.	First year.	Second year.	Third year.	Fourth year.	Fifth year.	Sixth year.	Seventh year.	Eighth year.
Reading	10 lessons a week.		5 lessons a week.					
Writing	10 lessons a week.		5 lessons a week.		3 lessons a week.		.....	.....
Spelling lists .....	.....	.....	.....	4 lessons a week.			.....	.....
English grammar..	Oral, with composition lessons.					a 5 lessons a week with text-book.		.....
Latin .....	.....	.....	.....	.....	.....	.....	.....	5 lessons.
Arithmetic	Oral, sixty minutes a week.		5 lessons a week with text-book.					.....
Algebra .....	.....	.....	.....	.....	.....	.....	5 lessons a week.	
Geography	Oral, sixty minutes a week.		a 5 lessons a week with text-book.				3 lessons a week.	
Natural science + hygiene.	Sixty minutes a week.							
United States history.	.....	.....	.....	.....	.....	.....	5 lessons a week.	.....
United States Constitution.	.....	.....	.....	.....	.....	.....	.....	a 5 lessons.
General history....	Oral, sixty minutes a week.							
Physical culture...	Sixty minutes a week.							
Vocal music	Sixty minutes a week, divided into 4 lessons.							
Drawing	Sixty minutes a week.							
Manual training or sewing+cookery.	.....	.....	.....	.....	.....	.....	One-half day each.	
Number of lessons.	20+7 daily exercises.	20+7 daily exercises.	20+5 daily exercises.	24+5 daily exercises.	27+5 daily exercises.	27+5 daily exercises.	23+6 daily exercises.	23+6 daily exercises.
Total hours of recitations.	12	12	11½	13	16½	16½	17½	17½
Length of recitations.	15 min.	15 min.	15 min.	20 min.	20 min.	25 min.	30 min.	30 min.

a Begins in second half year.

In the fifth and sixth years the number of recitations increases to 27 per week, owing to the addition of formal grammar, and the total number of hours required for all is sixteen and one-fourth per week, or an average of three and one-fourth per day.

In the seventh and eighth years the number of lessons decreases to 23, history being added, penmanship and special lessons in spelling discontinued, the time devoted to geography reduced to 3 lessons a week. But the recitation is increased to thirty minutes in length. Manual training occupies a half day, or two and one-half hours, each

week. The total is nineteen hours per week, or three and three-quarters per day.

The foregoing tabular exhibit shows all of these particulars.

IV. METHODS AND ORGANIZATION.

Your committee is agreed that the time devoted to the elementary school work should not be reduced from eight years, but they have recommended, as hereinbefore stated, that in the seventh and eighth years a modified form of algebra be introduced in place of advanced arithmetic, and that in the eighth year English grammar yield place to Latin. This makes, in their opinion, a proper transition to the studies of the secondary school and is calculated to assist the pupil materially in his preparation for that work. Hitherto the change from the work of the elementary school has been too abrupt, the pupil beginning three formal studies at once, namely, algebra, physical geography, and Latin.

Your committee has found it necessary to discuss the question of methods of teaching in numerous instances while considering the question of educational values and programmes, because the value and time of beginning of the several branches depend so largely on the method of teaching.

The following recommendations, however, remain for this part of their report:

They would recommend that the specialization of teachers' work should not be attempted before the seventh or eighth year of the elementary school, and in not more than one or two studies then. In the secondary school it is expected that a teacher will teach one, or at most two, branches. In the elementary school, for at least six years, it is better, on the whole, to have each teacher instruct his pupils in all the branches that they study, for the reason that only in this way can he hold an even pressure on the requirements of work, correlating it in such a manner that no one study absorbs undue attention. In this way the pupils prepare all their lessons under the direct supervision of the same teacher, and by their recitations show what defects of methods of study there have been in the preparation.

The ethical training is much more successful under this plan, because the personal influence of a teacher is much greater when he or she knows minutely the entire scope of the school work. In the case of the special teacher the responsibility is divided and the opportunities of special acquaintance with character and habits diminished.

With one teacher, who supervises the study and hears all the recitations, there is a much better opportunity to cultivate the two kinds of attention. The teacher divides his pupils into two classes and hears one recite while the other class prepares for the next lesson. The pupils reciting are required to pay strict attention to the one of their number who is explaining the point assigned him by the teacher; they are to

be on the alert to notice any mistakes of statement or omissions of important data; they are at the same time to pay close attention to the remarks of the teacher. This is one kind of attention which may be called associated critical attention. The pupils engaged in the preparation of the next lesson are busy, each one by himself, studying the book and mastering its facts and ideas, and comparing them one with another, and making the effort to become oblivious of their fellow-pupils, the recitation going on, and the teacher. This is another kind of attention, which is not associated, but an individual effort to master for one's self without aid a prescribed task and to resist all distracting influences. These two disciplines in attention are the best formal training that the school affords.

Your committee has already mentioned a species of faulty correlation wherein the attempt is made to study all branches in each, misapplying Jacotot's maxim, "All is in all" (*tout est dans tout*).

A frequent error of this kind is the practice of making every recitation a language lesson, and interrupting the arithmetic, geography, history, literature, or whatever it may be, by calling the pupil's attention abruptly to something in his forms of expression, his pronunciation, or to some faulty use of English; thus turning the entire system of school work into a series of grammar exercises and weakening the power of continuous thought on the objective contents of the several branches by creating a pernicious habit of self-consciousness in the matter of verbal expression. While your committee would not venture to say that there should not be some degree of attention to the verbal expression in all lessons, it is of the opinion that it should be limited to criticism of the recitation for its want of technical accuracy. The technical words in each branch should be discussed until the pupil is familiar with their full force. The faulty English should be criticised as showing confusion of thought or memory, and should be corrected in this sense. But solecisms of speech should be silently noted by the teacher for discussion in the regular language lesson.

The question of promotion of pupils has occupied from time to time very much attention. Your committee believes that in many systems of elementary schools there is injury done by too much formality in ascertaining whether the pupils of a given class have completed the work up to a given arbitrarily fixed point, and are ready to take up the next apportionment of the work. In the early days of city school systems, when the office of superintendent was first created, it was thought necessary to divide up the graded course of study into years of work, and to hold stated annual examinations to ascertain how many pupils could be promoted to the next grade or year's work. All that failed at this examination were set back at the beginning of the year's work to spend another year in reviewing it. This was to meet the convenience of the superintendent, who, it was said, could not hold examinations to suit the wants of individuals or particular classes. From

this arrangement there naturally resulted a great deal of what is called "marking time." Pupils who had nearly completed the work of the year were placed with pupils who had been till now a year's interval below them. Discouragement and demoralization at the thought of taking up again a course of lessons learned once before caused many pupils to leave school permanently.

This evil has been remedied in nearly one-half of the cities by promoting pupils whenever they have completed the work of a grade. The constant tendency of classification to become imperfect by reason of the difference in rates of advancement of the several pupils, owing to disparity in ages, degree of maturity, temperament, and health, makes frequent reclassification necessary. This is easily accomplished by promoting the few pupils who distance the majority of their classmates into the next class above, separated as it is, or ought to be, by an interval of less than half a year. The bright pupils thus promoted have to struggle to make up the ground covered in the interval between the two classes, but they are nearly always able to accomplish this, and generally will in two years' time need another promotion from class to class.

The procrustean character of the old city systems has been removed by this device.

There remain for mention some other evils besides bad systems of promotion due to defects of organization. The school buildings are often with superstitious care kept apart exclusively for particular grades of pupils. The central building erected for high school purposes, though only half filled, is not made to relieve the neighboring grammar school, crowded to such a degree that it can not receive the classes which ought to be promoted from the primary schools. It has happened in such cases that this superstition prevailed so far that the pupils in the primary school building were kept at work on studies already finished because they could not be transferred to the grammar school.

In all good school systems the pupils take up new work when they have completed the old, and the bright pupils are transferred to higher classes when they have so far distanced their fellows that the amount of work fixed for the average ability of the class does not give them enough to do.

In conclusion, your committee would state, by way of explanation, that it has been led into many digressions in illustrating the details of its recommendations in this report through its desire to make clear the grounds on which it has based its conclusions, and through the hope that such details will call out a still more thoroughgoing discussion of the educational values of branches proposed for elementary schools, and of the methods by which those branches may be successfully taught.

With a view to increase the interest in this subject your committee recommends the publication of selected passages from the papers sent

in by invited auxiliary committees and by volunteers, many of these containing valuable suggestions not mentioned in this report.

WILLIAM T. HARRIS, *Chairman,*
United States Commissioner of Education,
Washington, District of Columbia.

I dissent from the majority report of the committee in regard to the following points:

ARITHMETIC.

(1) *As to fractions.*—In teaching arithmetic there does not exist any greater difficulty in getting small children to grasp the nature of the fraction as such than in getting them to grasp the idea of the simpler whole numbers. It is true that the fractions $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, etc., as symbols, are a little more complex than are the single digits; but as to the real meaning, when once the fractional idea has been properly developed by the teacher and the significance of the idea apprehended by the pupil, it is as easily understood as any other simple truth. Children get the idea of half, third, or quarter of many things long before they enter school, and they will as readily learn to add, subtract, multiply, and divide fractions as they will whole numbers. In using fractions they will draw diagrams and pictures representing the processes of work as quickly and easily as they illustrate similar work with integers. It is of course assumed that the teacher knows how to teach arithmetic to children, or, rather, how to teach the children how to teach themselves. There is really no valid argument why children in the second, third, and fourth years in school should not master the fundamental operations in fractions. Not only this, they will put the more common fractions into the technique of percentage, and do this as well in the second and third grades as at any other time in their future progress. There is only one new idea involved in this operation, and that consists in giving an additional term—per cent—to the fractional symbol. When one number is a part of another it may be regarded as a fractional part, or as such a per cent of it. A great deal of percentage is thus learned by the pupils early in the course. Children are not hurt by learning. Standing still and lost motion kill.

Every recitation should reach the full swing of the learner's mind, including all his acquisitions on any given topic. But if the teaching of fractions be deferred, as it usually is in most schools, the time may be materially shortened by teaching addition and subtraction of fractions together. This is simple enough if different fractions having common denominators are used at first, such as $\frac{2}{3} + \frac{1}{3} = ?$, and $\frac{2}{3} - \frac{1}{3} = ?$. Then the next step, after sufficient drill on this case, is to take two fractions (simple) of different units of value, as $\frac{1}{2} + \frac{1}{3} = ?$, and $\frac{1}{2} - \frac{1}{3} = ?$. Multiplication and division may be treated similarly.

In decimals the pupil is really confronted by a simpler form of fractions than the varied forms of common fractions.

Devices and illustrations of a material kind are necessary to build up in the pupil's mind at the beginning a clear concept of a tenth, etc., and then to show that one tenth written as a decimal is only a shorthand way of writing $\frac{1}{10}$ as a common fraction, and so on. He sees very soon that the decimal is only a shorthand common fraction, and this notion he must hold to. This is the vital point in decimals. The idea that they can be changed into common fractions and the reverse at will establishes the fact in the pupil's mind that they are common fractions and not uncommon ones. Fixing the decimal point will in a short time take care of itself.

In teaching arithmetic the steps are: (1) Developing the subject till each pupil gets a clear conception of it; (2) necessary drill to fix the process; (3) connecting the subject with all that has preceded it; (4) its applications; (5) the pupil's ability to sum up clearly and concisely what he has learned.

(2) *As to abridgment.*—Under this head I hold that a course in arithmetic, including simple numbers, fractions, tables of weights and measures, percentage and interest, and numerical operations in powers, does not fit a pupil to begin the study of algebra. That while he may carry the book under his arm to the schoolroom, he is too poorly equipped to make headway on this subject, and instead of finishing up algebra in a reasonable length of time he is kept too long at it, with a strong probability of his becoming disgusted with it.

There are subjects, however, in the common school arithmetic that may be dropped out with great advantage, to wit, all but the simplest exercises in compound interest, foreign exchange, all foreign moneys (except reference tables of values), annuities, alligation, progression; and the entire subjects of percentage and interest should be condensed into about twenty pages.

Cancellation, factoring, proportion, evolution, and involution should be retained. Cancellation and factoring should be strongly emphasized, owing to their immense value in shortening work in arithmetic, algebra, and in more advanced subjects. Some drill in the metric system should not be omitted.

(3) *As to mental arithmetic.*—Till the end of the fourth year the pupil does not need a text-book of mental arithmetic. So far his work in arithmetic should be about equally divided between written and mental. At the beginning of the fifth year, in addition to his written arithmetic, he should begin a mental arithmetic and continue it three years, reciting at least four mental arithmetic lessons each week. The length of the recitation should be twenty minutes. A pupil well drilled in mental arithmetic at the end of the seventh year, if the school age begins at 6, is far better prepared to study algebra than the one who has not had such a drill. There are a few problems in arithmetic that can be solved more easily by algebra than by the ordinary processes of arithmetic, but there are many numerical problems in arithmetic of the first sort, as

that can be more easily handled by mental arithmetic than by algebra. To attack arithmetical problems by algebra is very much like using a tremendous lever to lift a feather. Those who have found a great stumbling-block in arithmetical "conundrums," have, if the inside facts were known, been looking in the wrong direction. A deficiency of "number-brain-cells" will afford an adequate explanation.

(4) *Rearrangement of subjects.*—There should be a rearranging of the topics in arithmetic so that one subject naturally leads up to the next. As an illustration, it is easily seen that whole numbers and fractions can be treated together, and that with United States money when the dime is reached is the proper time to begin decimals, and that when "a square" in surface measure first comes up the next step is the square of a number as well as its square root, and that solid measure logically lands the learner among cubes and cube roots. When he learns that 1,728 cubic inches make 1 cubic foot he is prepared to find the edge of the cube. What is meant here is pointing the way to the next above. All depends upon the teacher's ability to lead the pupil to see conditions and relations. My contention is that truth, so far as one is capable of taking hold of it when it is properly presented, is always a simple affair.

(5) *As to algebra.*—If algebra be commenced at the middle of the seventh year let the pupil go at it in earnest and keep at it till he has mastered it. Here the best opportunities will be afforded him to connect his algebraic knowledge to his arithmetical knowledge. He builds the one on top of the other. The skillful teacher always insists that the learner shall establish and maintain this relationship between the two subjects. To switch around the other way appears to me to be the same as to omit certain exercises in the common algebra because they are more briefly and elegantly treated in the calculus. It is admitted that a higher branch of mathematics often throws much light on the lower branches, but these side lights should be employed for the purpose of leading the learner onward to broader generalizations. Unless one sees the lower clearly, the higher is obscure. Build solidly the foundation on arithmetic—written and mental—and the higher branches will be more easily mastered and time saved.

HISTORY OF THE UNITED STATES.

In teaching this branch in the public schools there does not appear, so far as I can see, any substantial reason why the pupils should not study and recite the history of the rebellion in the same manner that they do the Revolutionary war. The pupils discuss the late war and the causes that led to it with an impartiality of feeling that speaks more for their good sense and clear judgment than any other way by which their knowledge can be tested. They may not get hold of the causes involved in that conflict, but they get enough to understand the motives which caused the armies to fight so heroically and fraction nearly the varied toward South, staked everything on the issue.

Just as the men who faced each other for four years and met so often in a death grapple will sit down now and quietly talk over their trials, sufferings, and conflicts, so do their children talk over these same stirring scenes. They, too, so far as my experience extends, are singularly free from bitterness and prejudice. It is certainly a period of history that they should study.

THE SPELLING BOOK.

In addition to the "spelling lists" I would supplement with a good spelling book. So far no "word list," however well selected, has supplied the place of a spelling book. All those schools that threw out the spelling book and undertook to teach spelling incidentally or by word lists failed, and for the same reason that grammar, arithmetic, geography, and other branches can not be taught incidentally as the pupil or the class reads Robinson Crusoe or any other similar work. It is an independent study and as such should be pursued.

JAMES M. GREENWOOD,
Superintendent of Schools, Kansas City, Mo.

While affixing my signature to the report of this committee as expressing substantial agreement with most of its leading propositions, I beg leave also to indicate my dissent from certain of its recommendations and to suggest certain additions which, in my judgment, the report requires.

(1) There are other forms of true correlation which should be included with the four mentioned in the first part of the report and which should be as clearly and fully treated as are these four.

The first is that form of correlation which is popularly understood by the name, and which is also called by some writers, concentration, coordination, unification, and alludes in general to a division of studies into content and form—by content meaning that upon which it is fitting that the mind of the child should dwell and by form the means or modes of expression by which thoughts are communicated. Or it may be thus expressed: the true content of education is (1) philosophy, or the knowledge of man as to his motives and hidden springs of action, indicated in history and literature, and (2) science, the knowledge of nature and its manifestations and laws. Its form is art, which is the deliberate, purposeful, and effective expression to others of that which has been produced within man by contact with other men and with nature, and is commonly referred to as divided into various arts, such as reading, writing, drawing, making, and modeling. The relation of content and form is that of principle and subordinate, the latter receiving its chief value from the former. In a true education they are so presented to the mind of the child that he instinctively and unconsciously grasps this relation, and is thereby lifted into a higher plane of thinking and living than if the various arts are taught, as they too commonly are, without reference to their true content. This

relation of form to content is vaguely referred to in the report, but nowhere definitely treated. It seems to me that it is a true form of correlation, and as such deserves special and definite treatment. Moreover, it is at present much in the minds of the teachers of this country, often in forms that are misleading and harmful. The fact that it adds the important element of interest to the dry details of common school life makes it especially attractive to progressive and earnest teachers, and this committee should recognize its importance and make such an utterance upon it as will guide the average teacher to a clear comprehension of its meaning and to a wise use of it in the school-room.

Second. There is a still higher form of correlation which is definitely referred to later in the report as that "of the several branches of human learning in the unity of the spiritual view furnished by religion to our civilization." This in the report is assigned absolutely to the province of higher education. While I do not wish to dissent wholly from this view, since it is doubtless true that this higher unity can not be comprehensively stated for the use of a child, yet a wise teacher can so present subjects to even a young child that a sense of the unity of all knowledge will to a certain degree be unconsciously developed in his mind. In regard to certain of the great divisions of human knowledge this relation is so evident that they can not be properly presented at all unless the relation be made clear. Such studies are history and geography.

(2) The recommendations upon the subject of language should be broadened to cover the production of good English by the child himself with the suggestion of suitable topics and proper methods. This report confines itself to the absorptive side of education and ignores that development of power over nature, man, and self which comes from free exercise of faculties and free expression of thought. The study of language as something for the child to use himself, the great means by which he is to assert his place in civilization and exert his influence for good, is nowhere referred to except in the vaguest way. This statement in regard to language applies almost equally well to drawing, and here is made evident the importance of the form of correlation to which I have just referred. The proper material for the training of the child in expression is that which is furnished by the study of man and nature. His mind being filled with high themes, he asserts his individuality, expresses himself in regard to them, and thereby gains at once both a closer and clearer comprehension of what he has studied and also the power by which he may become a factor in his generation.

(3) I would wish to omit the word "weekly" where it occurs in the discussion of the subjects of general history and science, unless it be understood to mean that an amount of time in the school year equivalent to sixty minutes ~~weekly~~ be given to each of these subjects. It is

often better to condense these subjects into certain portions of the year, giving more time to them each week and using them as the basis, to a certain degree, of language work. I believe that, especially with young children, clearer concepts are produced by such connected study pursued for fewer weeks than by lessons seven days apart.

(4) In my judgment manual training should not be limited to the seventh and eighth grades, but should begin in the kindergarten with the simple study of form from objects and the reproduction in paper of the objects presented, and should extend, in a series of carefully graded lessons, through all the grades, leaving, however, the heavier tools, such as the plane, for the seventh and eighth grades. By these means an interest is kept up in the various human industries, sympathy for all labor is created, and a certain degree of skill is developed; moreover, the interest of the pupils in their school is greatly enhanced. Manual training has often proved the magnet by which boys at the restless age have been kept in school instead of leaving for some gainful occupation.

(5) I desire to suggest that geometry may be so taught as to be a better mathematical study than algebra to succeed or accompany arithmetic in the seventh and eighth grades. I do not refer particularly to inventional geometry, to which the committee accords a slighting attention, but to constructive geometry and the simplest propositions in demonstrative geometry, thus involving the comprehension of the elementary geometric forms and their more obvious relations. This study may be made of especial interest in connection with manual training and drawing, while it presents fewer difficulties to the immature mind than the abstractions of algebra, since it connects more directly with the concrete, by which its presentation may often be aided.

(6) While agreeing fully with the majority of the committee that the full scientific method should not be applied to the study of elementary science by young children, yet I am compelled to favor more of experimentation and observation by the child, and less of telling by the teacher than the report would seem to favor.

(7) I would go further than the majority of the committee, and insist that except in rare cases there should be no specialization of the teaching force below the high school, and that even in the first years of the high school, so far as possible, specialization should be subordinated to a general care of the child's welfare and oversight of his methods of study, which are impossible when a corps of teachers give instruction, each in one subject, and see the student only during the hour of recitation.

(8) While in the main I agree with the bald statements under the head "Correlation by synthesis of studies," since reference is made to only a very artificial mode of synthesis not at all in vogue in this country, I must dissent emphatically from this portion of the report as by inference condemning a most important department of correlation, to

which I have referred earlier. The doctrine of concentration is not necessarily artificial; rather it refers to the higher unity, of which this committee has spoken in glowing terms as belonging to the province of higher education. It also includes the division of the school curriculum into content and form, which this committee inferentially adopts in its treatment of language. I do not believe, any more than do the majority of the committee, that the entire course of study can be literally and exactly centered about a single subject, nor do I believe in any artificial correlation; but there is a natural relation of all knowledges, which this committee admits in various places, and which is the basis of a proper synthesis of studies, according to the psychological principle of apperception.

(9) If by the term "oral," as applied to lessons in biography and in natural science, the committee means, as the word would imply, that the instruction is to be given in the form of lectures by the teacher, I can not in full agree with the committee's conclusions. As I have already stated, in natural science the work should be largely that of observation, and in history and biography, while in the very lowest grades the teachers should tell the children stories, as soon as it is possible the desired information should be obtained by the student through reading. To this end the reading lesson in school should be properly correlated with his other studies, and he should be advised as to his home reading. The information thus obtained should be the subject of conversation in the class, and should furnish the material for much of the written language work of the children.

(10) I must dissent emphatically and entirely from that portion of the report which recommends that a text-book in grammar be introduced into the fifth year of the child's school life. It is a question in my mind whether it would not be better if the text-book were not introduced into the grades below the high school at all. Certainly it should not appear before the seventh year. Such knowledge of grammar as will familiarize the child with the structure of the sentence, the basis of all language, and as will enable him to use correctly forms of speech which the necessities of expression require, should be given orally by the teacher in connection with the child's written work, when needed; but against the introduction of a text-book upon grammar, the most abstruse of all the subjects of the school curriculum, when the pupil is not more than 10 years old, I must protest. Instead of that the child should devote much time, some every day, to writing upon proper themes in the best English he can command, furnishing occasion to the teacher to correct such errors as he may make, and acquiring by use acquaintance with the correct forms of grammar. If, as will doubtless be the case in most cities, local conditions render the introduction of Latin into the eighth grade inadvisable, this study of grammar may be made in that grade somewhat more intensive.

(11) If by a text-book in geography is meant that which is commonly understood by the term, and not simply geographical reading matter, in my judgment it should not be introduced earlier than the fifth year.

These suggestions and expressions of dissent, if approved by the committee, would necessitate some change in the programme submitted, the most important of which would be the making room for the production of English in the grades. This could be provided in the first and second grades by taking some of the time devoted to penmanship and doing the work partly in connection with the reading classes. In the third and fourth grades it should take some of the time devoted to penmanship, and should be studied also in connection with geography and reading, and in the fifth and sixth grades it should take all of the time given to grammar.

I regret to be compelled to express dissent upon so many points, but as most of them appear to me vital and as the differences appear to be not merely superficial but fundamental, affecting and affected by one's entire educational creed, I can not do otherwise. To most of the report I most gladly give my assent and approval.

CHARLES B. GILBERT,
Superintendent of Schools, St. Paul, Minn.

I agree most heartily with the main features of the foregoing report of the subcommittee on correlation of studies. It is so admirable in its analysis of subjects and in its statement of comparative education values, and so suggestive in its practical applications to teaching, that I regret to find myself appearing in any way to dissent from its conclusions. Indeed my principal objection is not against anything contained in the report (unless it be against a possible inference which might be drawn at one point), but it refers rather to what seems to me to be an omission.

In addition to all the forms of correlation recommended in the report, it seems to me possible to make a correlation of subjects in a programme in such way that the selection of subject-matter may be, to some extent, from all fields of knowledge. These selections should be such as are related to one another so as to be mutually helpful in acquisition. They should be the main features of knowledge in the different departments.

These different departments, from which the chosen subjects should be taken, must be fundamental ones, and must be sufficiently numerous to represent universal culture. The report itself indicates conclusively what these are.

Reference is made in the report to various attempts that have been made to correlate subjects of study.

A very just criticism is made upon that attempt at correlation by the use of the story of Robinson Crusoe as a center of correlation. It is distinctly pointed out in the report that the experiences of Robinson

Crusoe are lacking in many of the elements of universal culture, and in many elements of education needed to adjust the individual properly to the civilization of our time and country. It is equally evident that the attempt to make this story the center of correlation leads directly to trivial exercises in other subjects in order to make them "correlate" with Robinson Crusoe. It is also shown in the report that it naturally leads to fragmentary knowledge of many subjects very much inferior to that clear, logically connected knowledge of a subject which may be had by pursuing it without reference to correlating it with all others.

It is at this point that, in my judgment, a wrong inference is permitted by the report.

It does not, as it seems to me, follow that because correlation based on Robinson Crusoe is a failure all correlations having the same general purpose will necessarily prove failures. For my own part, I do not believe that correlation needs any "center," outside the child and its natural activities. If, however, it seems wiser to give special prominence to any given field of acquisition, it should, in my judgment, be accorded to language and its closely related subjects—reading, spelling, writing, composing, study of literature, etc. Indeed language, as a mode of expression, is organically related to thinking, in all fields of knowledge, as form is related to content. A "system" or "programme" of correlation on this basis would seek for fundamental ideas in all the leading branches, and make them themes of thought and occasions of language exercises. The selections would omit all trivialities in all subjects, and would not attempt to correlate for the mere sake of correlation; but would seek to correlate wherever by such correlation kindred themes may be made to illuminate one another. To illustrate, concrete problems in arithmetic would be sought that would clearly develop and illustrate mathematical ideas and their application; but in a secondary way these problems would be sought for in the various departments of concrete knowledge—geography, history, physics, chemistry, astronomy, meteorology, political, industrial, or domestic economy. But none of these themes would be so relied upon for problems as to compel one to choose unreasonable or trivial relations on which to base them. The problems themselves should represent true and important facts and relations of the other subjects as surely and rigidly as they should involve correct mathematical principles; and all such exercises should be rightly related to the child's education in language.

In like manner, when a child is engaged in nature study of any kind, some valuable problems in mathematics may be found rightly related, both to the subject directly in hand and the child's natural progress in arithmetic. Also many of the lessons in nature study are directly related to some of the finest literature ever produced, in which analogies of nature are made the means of expression for the finest and most delicate of the human experiences. When the child has mastered

the physical facts on which the literary inspiration is based is the true time to give him the advantage of the study of such literature. These ideas are not only rightly related to one another, but to the mind itself. It is, so to speak, the nascent moment when the mind can easily and fully master what might else remain an impenetrable mystery, and all because subjects and occasion have come into happy conjunction.

This is not the place in which to attempt any elaboration of such a system of correlation. But I feel that its absence from the report may make many persons feel that the latter is so far incomplete.

L. H. JONES,

Superintendent of Schools, Cleveland, Ohio.

With the main lines of thought in this report I find myself in agreement. With many of its details, however, I am not in accord. I regret to have to express my dissent from its conclusions in the following particulars:

(1) The report makes too little of the uses of grammar as supplying canons of criticism which enable the pupil to correct his own English, and as furnishing a key (grammatical analysis) that gives him the power to see the meaning of obscure or involved sentences.

(2) For the study of literature complete works are to be preferred to the selections found in school readers.

(3) That species of language exercise known as paraphrasing I regard as harmful.

(4) The study of number should not be omitted from the first year in school. Practice in the primary operations of arithmetic should not be omitted from the seventh and eighth years. The quadratic equation should be reserved for the high school.

(5) The foreign language introduced into the elementary school course should be a modern language—French or German. Latin should be reserved for those who have time and opportunity to master its literature.

(6) In the general programme of studies the school day is cut up into too many short periods. The tendency of such a programme as that in the text would be to destroy repose of mind and render reflection almost an impossibility.

(7) I desire to express my agreement with the opinions stated in sections 2, 3, 6, and 9 of Mr. Gilbert's dissenting opinion, and in the main with what Mr. Jones says on the correlation of studies.

WILLIAM H. MAXWELL,

Superintendent of Schools, Brooklyn, N. Y.

CHAPTER XIII.

REPORT OF THE COMMITTEE OF FIFTEEN—CONTINUED.

III.—REPORT OF THE SUBCOMMITTEE ON THE ORGANIZATION OF CITY SCHOOL SYSTEMS.

It is understood that the committee is to treat of city school systems which are so large that persons chosen by the people to manage them, and serving without pay, can not be expected to transact all the business of the system in person, nor to have personal knowledge of all business transactions; and which are also so large that one person employed to supervise the instruction can not be assumed to personally manage or direct all of the details thereof; but must, in each case, act under plans of organization and administration established by law, and through assistants and representatives.

The end for which a school system exists is the instruction of the children, the word instruction being used with the meaning it attains in the mind of a well-educated person, if not in the mind of an educational expert.

To secure this end, no plan of organization alone will suffice. Nothing can take the place of a sincere desire for good schools, of a fair knowledge of what good schools are and of what will make them, of a public spirit and a moral sense on the part of the people, which are spontaneous or which can be appealed to with confidence. Fortunately the interest which the people have in their own children is so large, and the anxiety of the community for public order and security is so great, that public sentiment may ordinarily be relied upon, or may be aroused to action, to choose proper representatives and take proper measures for the administration of the schools. If, in any case, this is not so, there is little hope of efficient schools. Wherever it is so, it alone will not suffice; but proper organization may become the instrument of public sentiment and develop schools that will be equal to the needs of all and become the safeguards of citizenship.

Efficient schools can be secured only by providing suitable buildings and appliances and by keeping them in proper order, on the one hand, and, on the other hand, by employing, organizing, aiding, and directing teachers so that the instruction shall have life and power to accomplish the great end for which schools are maintained.

The circumstances of the case naturally and quickly separate the duties of administration into two great departments, one which manages the business affairs, and the other which supervises the instruction. The business affairs of the school system may be transacted by any citizens of common honesty, correct purposes, and of good business experience and sagacity. The instruction will be ineffective and abnormally expensive unless put upon a scientific educational basis and supervised by competent educational experts.

There will be a waste of money and effort, and a lack of results, unless the authorities of these two departments are sympathetic with each other; that is, unless, on the one hand, the business management is sound, is appreciative of good teaching, looks upon it as a scientific and professional employment, and is alert to sustain it; and unless, on the other hand, the instructors are competent and self-respecting, know what good business management is, are glad to uphold it, and are able to respect those who are charged with responsibility for it.

To secure efficiency in these departments, there must be adequate authority and quick public accountability. The problem is not merely to secure some good schoolhouses, but good schoolhouses wherever needed, and to avoid the use of all houses which are not suitable; it is not to get some good teaching, but to prevent all bad teaching and to advance all the teaching to the highest possible point of special training, of professional spirit, and of life-giving power. All of the business matters must be intrusted to competent business hands and managed upon sound business principles, and all of the instruction must be put upon a professional basis. To insure this, there must be deliberation and wisdom in determining policy, and then the power to do what is determined upon must be present and capable of exercise, and the responsibility for the proper exercise of the power must, in each case, be individual and immediate.

It is imperative that we discriminate between the legislative and the executive action in organizing and administering the schools. The influences which enter into legislative action looking to the general organization and work of the schools must necessarily and fundamentally flow directly from the people and be widely spread. The greater the number of people, in proportion to the entire population, who can be led to take a positive interest and an active part in securing good schools the better will the schools be, provided the people can secure the complete execution of their purposes and plans. But experience has clearly shown that many causes intervene to prevent the complete execution of such plans; that all the natural enemies of sound administration scent plenty of plunder and are especially active here; that good school administration requires much strength of character, much business experience, much technical knowledge, and can be measurably satisfactory only when the responsibility is adequate and the penalties for maladministration are severe. Decentralization in making the plan

and determining what shall be done, and centralization in executing the plan and in doing what is to be done, are perhaps equally important.

It should be remembered that the character of the school work of a city is not merely a matter of local interest, and that the maintenance of the schools does not rest merely or mainly upon local authority. The people of the municipality, acting, and ordinarily glad to act, but in any event being required to act, under and pursuant to the law which has been ordained by the sovereign authority of the State, establish and maintain schools. They must have the taxing power which the State alone possesses in order to enable them to proceed at all. They must regard the directions which the State sees fit to give as to the essential character of the schools, when it exercises in their behalf or when it delegates to them the power of taxation.

The plan should be flexible for good, while inflexible for evil. After meeting essential requirements, the people of the municipality may and should be empowered to proceed as much further as they will in elaborating a system of schools. The higher the plane of average intelligence, and the more generally and the more directly the people act in deciding what shall be done, and the greater the facility and completeness with which the intelligence of the city is able to secure the proper execution of its plans by officers appointed for that purpose, the more elaborate and the more efficient will be the schools.

It is idle to suggest that centering executive functions is unwisely taking power away from the people. The people can not execute plans themselves. The authority to do so must necessarily be delegated. The question simply is, Shall it be given to a number of persons, and if so, to how many? Or to only one? This question is to be decided by experience, and it is of course true that experience has not been uniform. But it is doubtless true that the general experience of the communities of the country has shown that where purely executive functions are conferred upon a number of persons jointly, they yield to antagonistic influences and shift the responsibility from one to another; and that centering the responsibility for the proper discharge of executive duties upon a single person, who gets the credit of good work and must bear the disgrace or penalty of bad work, and who can quickly be held accountable for misdeeds and inefficiency, has secured the fullest execution of public plans and largest results. To call this "centralization," with the meaning which commonly attaches to the word, is inaccurate. Instead of removing the power from the people, it is keeping the power closer to the people and making it possible for the citizen, in his individual capacity, and for organized bodies of citizens, to secure the execution of plans according to the purpose and intent with which those plans were made. Indeed it is safe to say that experience has shown that it is the only way in which to prevent the frequent thwarting of the popular will and the defiance of individuals whose interests are ignored or whose rights are invaded.

So much, it seems to us, is strongly supported both by reason and by experience, and is clearly manifest.

But all the people of a city whose population is numbered by hundreds of thousands or millions can not meet in a legislative assemblage to formulate plans for school government any more than they can all meet to make plans for municipal government. They can not even gather in mass meetings, and, if they could, mass meetings can not deliberate. Even their legislative action must flow not from a primary, but from a representative assembly.

What shall such a representative legislative body be called? How shall it be chosen? Of how many members shall it be composed? And what shall be its powers? These and other similar questions are all-important and must be determined by the lawmaking power of the State. The sentiments of the city, as expressed through the local organizations and particularly through the newspapers, must of course have much weight with the legislature if there is anything like unanimity or any very strong preponderance of opinion in the city; for the plan for which a community expresses a preference will surely be likely to operate most effectually in that community. But the local sentiment is not conclusive. When divided it is no guide at all. The legislature is to take all the circumstances into consideration, take the world's experience for its guide, and, acting under its responsibilities, it must exercise its high powers in ways that will build up a system of schools in the city likely to articulate with the State educational system and become the effective instrument of developing the intelligence and training the character of the children of the city up to the ideals of the State.

The name of the legislative branch of the school government is not material, and the one to which the people are accustomed may well continue to be employed. There is no name more appropriate than the "board of education."

The manner of selecting the members of this legislative body may turn somewhat upon the circumstances of the city. We are strongly of the opinion that in view of the well-known difficulty about securing the attendance of the most interested and intelligent electors at school elections, as well as because of the apparent impossibility of freeing school elections from political or municipal issues, the better manner of selection is by appointment.

If the members of the board are appointed, the mayor of the city is likely to be the official to whom the power of appointment may most safely be intrusted. The mayor is not suggested because his office should sustain any relations to the school system, but in spite of the fact that it does not and should not. The school system should be absolutely emancipated from partisan politics and completely disassociated from municipal business. But we think the appointments should be made by some one person rather than by a board. The mayor is

representative of the whole city and all its interests. While not chosen with any reference to the interests of the schools, he may be assumed to have information as to the fitness of citizens for particular responsibilities and to be desirous of promoting the educational interests of the people. If he is given the power of appointment, he should be particularly enjoined by law to consider only the fitness of individuals and to pay no regard to party affiliations, unless it be particularly to see to it that no one particular party has an overwhelming preponderance in the board. The mayor very commonly feels constrained under the pressure of party expediency to make so many questionable appointments that he is only too glad, and particularly so when enjoined by the law, to make very acceptable appointments of members of school boards in order that he may gratify the better sentiment of the city. We are confident that the problem of getting a representative board of education is not so difficult as many think, if the board is not permitted to make patronage of work and of salaried positions at the disposal of the public school system. Under such circumstances, and more and more so as we have approached such circumstances, appointment in the way we suggest has produced the best school boards in the larger cities of the country.

Attempts to eliminate partisanship from school administration by arraying an equal number of partisans against each other in school boards do not at least aim at an ideal. At times such boards have worked well and at others have led to mischievous consequences. The true course is to insist that all who have any share in the management of the schools shall divest themselves of partisanship, whether political or religious, in such management, and give themselves wholly to the high interests intrusted to them. If it be said that this can not be realized, it may be answered, without admitting it, that even if that were so it would be no reason why the friends of the schools should not assert the sound principle and secure its enforcement as far as possible. We must certainly give no countenance to makeshifts, which experience has shown to be misleading and expensive. The right must prevail in the end, and the earlier and more strongly it is contended for the sooner it will prevail.

The members of school boards should be representative of the whole population and of all their common educational interests, and should not be chosen to represent any ward or subdivision of the territory, or any party or element in the political, religious, or social life thereof. Where this principle is not enforced the members will feel bound to gain what advantage they can for the subdistrict or special interests they represent; bitter contests will ensue, and the common interests will suffer.

The number of the members of a board of education should be small. In cities of less than 500,000 inhabitants it should not be more than nine, and preferably not more than five. In the very largest cities it may well be extended to fifteen.

The term for which members are appointed should be a long one, say, five years.

We think it an excellent plan to provide for two branches and sets of powers in the board of education; the one to have the veto power, or at least to act as a check upon the acts of the other. This may be accomplished by creating the office of school director and charging the incumbent with executive duties on the business side of the administration, and by giving him the veto over the acts of the other branch of the board, which may be called the school council. Beyond the care and conservatism, which are insured by two sets of powers acting against each other, this plan has the advantage of giving the chief executive officer of the system just as high and good a title as that of members of the board; it is likely to secure a more representative man, and gives him larger prerogatives in the discharge of his executive duties and better standing among the people, particularly among the employees and teachers associated with the public school system.

If this plan is adopted the school director should be required to give his entire time to the duties of his position and be properly compensated therefor. He should be the custodian of all property and should appoint all assistants, janitors, and workmen authorized by the board for the care of this property. He should give bond with sufficient sureties and penalties for the faithful and proper discharge of all his duties. He should be authorized by law to expend funds, within a fixed limit, for repairs, appliances, and help, without the action of the board. All contracts should be made by him and should run in his name, and he should be charged with the responsibility of seeing that they are faithfully and completely executed. All contracts involving more than a limited and fixed sum of money should be let upon bids to be advertised for and opened in public. He should have a seat in the board of education, should not vote, but should have the power to veto, either absolutely or conditionally, any of the acts of the board through a written communication. This officer and the school council should together constitute the board of education.

The board of education should be vested only with legislative functions and should be required to act wholly through formal and recorded resolutions. It should determine and direct the general policy of the school system. Within reasonable limits, as to amount, it should be given power, in its discretion, to levy whatever moneys may be needed for school purposes. It should control the expenditure of all moneys beyond a fixed and limited amount, which may safely and advantageously be left to the discretion of the chief executive business officer. It should authorize, by general resolutions, the appointment of necessary officers and employees in the business department, and of the superintendent, assistants, and teachers in the department of instruction, but it should be allowed to make no appointment other than its own clerk. With this necessary exception, single officers should be charged with responsibility for all appointments.

This plan, not in all particulars, but in the essential ones, has been on trial in the city of Cleveland, Ohio, for nearly three years, and has worked with very general acceptability. If this plan is adopted, the chief executive officer of the system is already provided for and his duties have already been indicated. Otherwise it will be necessary for the board to appoint such an officer. In that event the law should declare him independent, confer upon him adequate authority for the performance of executive duties, and charge him with responsibility. But we know of no statutory language capable of making an officer appointed by a board, and dependent upon the same board for supplies, independent in fact of the personal wishes of the members of that board. And right here is where the troubles rush in to discredit and damage the school system.

We now come to the subject of paramount importance in making a plan for the school government in a great city, namely, the character of the teaching force and the quality of the instruction. A city school system may be able to withstand some abuses on the business side of its administration and continue to perform its function with measurable success, but wrongs against the instruction must, in a little time, prove fatal. The strongest language is none too strong here. The safety of the Republic, the security of American citizenship, are at stake. Government by the people has no more dangerous pitfall in its road than this, that in the mighty cities of the land the comfortable and intelligent masses, who are discriminating more and more closely about the education of their children, shall become dissatisfied with the social status of the teachers and the quality of the teaching in the common schools. In that event they will educate their children at their own expense, and the public schools will become only good enough for those who can afford no better. The only way to avert this is by maintaining the instruction upon a purely scientific and professional footing. This is entirely practicable, but it involves much care and expense in training teachers, the absolute elimination of favoritism from appointments, the security of the right to advancement, after appointment, on the basis of merit, and a general leadership which is kindly, helpful, and stimulating to individuals, which can secure harmonious cooperation from all the members and which lends energy and inspiration to the whole body.

This can not be secured if there is any lack of authority, and experience amply proves that it will not be secured if there is any division of responsibility. The whole matter of instruction must be placed in the hands of a superintendent of instruction, with independent powers and adequate authority, who is charged with full responsibility.

The danger of inconsiderate or improper action by one vested with such powers is of course possible, but it is remote. Regardless of the legal powers with which he may be individually vested, he is in fact and in law a part of a large system. He must act through others and in the presence of multitudes. There is a great publicity about all he

does. When a single officer carries such responsibility he is at the focus of all eyes. There are the strongest incentives to right action. Without discovery, at least by many persons, he can not act wrongfully. If he is required to act under and pursuant to a plan, the details of which have been announced, and of which we shall speak in a moment, a wrongful act will be known to the world and he must bear the responsibility of it, and the danger of maladministration is almost eliminated.

Moreover, we must consider the alternative. It is not in doubt. All who have had any contact with the subject are familiar with it. It is administration by boards or committees, the members of which are not competent to manage professional matters and develop an expert teaching force. Yet they assume, and in most cases honestly, the knowledge of the most experienced. They override and degrade a superintendent, when they have the power to do so, until he becomes their mere factotum. For the sake of harmony and the continuance of his position he concedes, surrenders, and acquiesces in their acts, while the continually increasing teaching force becomes weaker and weaker and the work poorer and poorer. If he refuses to do this, they precipitate an open rupture and turn him out of his position. Then they cloud the issues and shift the responsibility from one to another. There are exceptions, of course, but they do not change the rule.

It will be unprofitable to mince words about this all-important matter. If the course of study for the public schools of a great city is to be determined by laymen, it will not be suited to the needs of a community. If teachers are to be appointed by boards or committees, the members of which are particularly sensitive to the desires of people who have votes or influence, looseness of action is inevitable and unworthy considerations will frequently prevail. If the action of a board or committee be conditioned upon the recommendation of a superintendent, the plan will not suffice. No one person is stronger than the system of which he is a part. Such a plan results in contests between the board and the superintendent, and such a contest is obviously an unequal one. There is little doubt of the outcome. In recommending for the appointment of teachers, the personal wishes of members of the board, in particular cases, will have to be acquiesced in. If a teacher, no matter how unfit, can not be dropped from the list without the approval of a board or committee after they have heard from her friends and sympathizers, she will remain indefinitely in the service. This means a low tone in the teaching force and desolation in the work of the schools. If the superintendent accepts the situation, he becomes less and less capable of developing a professional teaching service. If he refuses to accept it, he is very likely to meet humiliation; dismissal is inevitable unless he is strong enough to make himself secure by doing the right thing and going directly to the people and winning their approval.

The superintendent of instruction should be charged with no duty save the supervision of the instruction, but should be charged with the responsibility of making that professional and scientific, and should be given the position and authority to accomplish that end.

If the board of education is constituted upon the old plan he must be chosen by the board. If it is constituted upon the Cleveland plan he may be appointed by the school director, with the approval of two-thirds or three-fourths of the council. The latter plan seems preferable, for it centralizes the main responsibility of this important appointment in a single individual. In either case the law and the sentiment of the city should direct that the appointee shall be a person liberally educated, professionally trained, one who knows what good teaching is, but is also experienced in administration, in touch with public affairs, and in sympathy with popular feeling.

The term of the superintendent of instruction should be from five to ten years, and until a successor is appointed. In our judgment it should be determinate, so that there may be a time of public examination, but it should be sufficiently long to enable one to lay foundations and show results without being carried under by the prejudices which always follow the first operation of efficient or drastic plans. The salary should be fixed by law, and not subject to change in the middle of a term or except by law.

For reasons already suggested, the superintendent, once appointed, should have power to appoint from an eligible list all assistants and teachers authorized by the board, and unlimited authority to assign them to their respective positions and reassign them or remove them from the force at his discretion.

To secure a position upon the eligible list from which appointments may be made, a candidate, if without experience, should be required to complete the full four years' course of the city high schools, or its equivalent, and in addition thereto pass the examination of the board of examiners and complete at least a year's course of professional training in a city normal training school under the direction of the superintendent. If the candidate has had, say, three years of successful experience as a teacher, he should be eligible to appointment by passing an examination held by a general examining board. This board may be appointed by the board of education, but should examine none but graduates of the high school and training school unless specially requested so to do by the superintendent of instruction. The number admitted to the training schools should be limited, and the examinations should be gauged to the prospective needs of the elementary schools for new teachers. The supply of new teachers may well be largely, but should not be wholly, drawn from this local source. The force will gain fresh vitality by some appointments of good and experienced teachers from outside.

The work of putting a large teaching force upon a professional basis, of making the teaching scientific and capable of arousing minds to action, is so difficult that a layman can scarcely appreciate it. It has hardly been commenced; it has been made possible only when the avenues of approach to the service have been closed against the unqualified and unworthy. After that, the supervision must be close and general as well as sympathetic and decisive. The superintendent must have expert assistants enough to learn the characteristics and measure the work of every member of the force. They must help and encourage, advise and direct, according to the circumstances of each case. The work must be reduced to a system and the workers brought into harmonious relations. Each room must show neatness and life, and the whole force must show ardor and enthusiasm. By directing the reading, by encouraging an interchange of visits, by organizing clubs for self-improvement, by frequent class, grade, and general meetings, the professional spirit must be aroused and the work energized. Those who show teaching power, versatility, amiability, reliability, steadiness, and growth must be rewarded with the highest positions; those who lack fiber, who have no energy, who are incapable of enthusiasm, who will not work agreeably with their associates, must go upon the retired list. Directness and openness must be encouraged. Attempts to invoke social, political, religious, or other outside influences to secure preferment must operate to close the door to advancement. In general and particular, bad teaching must be prevented. In every room a firm and kindly management must prevail and good teaching must be apparent. All must work along common lines which will insure general and essential ends. Until a teacher can do this, and can be relied upon to do it, she must be helped and directed; when it is manifest she can not or will not do it, she must be dismissed; when she shows she can do it and wants to do it, she must be left to exercise her own judgment and originality and do it in her own way. In the schoolroom the teacher must be secure against interference. In all the affairs of the school her judgment must be trusted to the utmost limit of safety. Then judgment will strengthen and self-respect and public respect will grow. The qualities which develop in the teacher will develop in the school. To develop these qualities with any degree of uniformity in a large teaching force requires steady and uniform treatment through a long course of years under superintendence which is professional, strong, just, and courageous; which has ample assistance and authority; which is worthy of public confidence and knows how to marshal facts, present arguments, and appeal to the intelligence and integrity of the community with success.

It is the business of the plan of organization to secure such superintendence. It can not be secured through an ordinary board of education operating on the old plan. It is well known what the influences are that are everywhere prevalent and must inevitably prevent it. It

may be secured in the law, and it must be secured there or it will not be secured at all.

In concluding this portion of the report, the committee indicates briefly the principles which must necessarily be observed in framing a plan of organization and government in a large city school system.

First. The affairs of the school should not be mixed up with partisan contests or municipal business.

Second. There should be a sharp distinction between legislative functions and executive duties.

Third. Legislative functions should be clearly fixed by statute and be exercised by a comparatively small board, each member of which is representative of the whole city. This board, within statutory limitations, should determine the policy of the system, levy taxes, and control the expenditures. It should make no appointments. Every act should be by a recorded resolution. It seems preferable that this board be created by appointment rather than election, and that it be constituted of two branches acting against each other.

Fourth. Administration should be separated into two great independent departments, one of which manages the business interests and the other of which supervises the instruction. Each of these should be wholly directed by a single official who is vested with ample authority and charged with full responsibility for sound administration.

Fifth. The chief executive officer on the business side should be charged with the care of all property and with the duty of keeping it in suitable condition; he should provide all necessary furnishings and appliances; he should make all agreements and see that they are properly performed; he should appoint all assistants, janitors, and workmen; in a word, he should do all that the law contemplates and all that the board authorizes concerning the business affairs of the school system, and when anything goes wrong he should answer for it. He may be appointed by the board, but we think it preferable that he be chosen in the same way the members of the board are chosen, and be given a veto upon the acts of the board.

Sixth. The chief executive officer of the department of instruction should be given a long term and may be appointed by the board. If the board is constituted of two branches, he should be nominated by the business executive and confirmed by the legislative branch. Once appointed, he should be independent. He should appoint all authorized assistants and teachers from an eligible list to be constituted as provided by law. He should assign to duties and discontinue services for cause, at his discretion. He should determine all matters relating to instruction. He should be charged with the responsibility of developing a professional and enthusiastic teaching force and of making all the teaching scientific and forceful. He must perfect the organization of his department and make and carry out plans to accomplish this. If he can not do this in a reasonable time he should be superseded by one who can.

The government of a vast city school system comes to have an autonomy which is largely its own and almost independent of direction or restraint. The volume of business which this government transacts is represented only by millions of dollars; it calls not only for the highest sagacity and the ripest experience, but also for much special information relating to school property and school affairs. Even more important than this is the fact that this government controls and determines the educational policy of the city and carries on the instruction of tens or hundreds of thousands of children. This instruction is of little value, and perhaps vicious, unless it is professional and scientific. This government is representative. All citizens are compelled to support it, and all have large interests which it is bound to promote. Every parent has rights which it is the duty of this school government to protect and enforce. When government exacts our support of public education, when it comes into our homes and takes our children into its custody and instructs them according to its will, we acquire a right which is as exalted as any right of property, or of person, or of conscience, can be; and that is the right to know that the environment is healthful, that the management is kindly and ennobling, and that the instruction is rational and scientific. It is needless to say to what extent these interests are impeded or blocked, or how commonly these rights of citizenship and of parentage are denied or defied, or how helpless the individual is who seeks their enforcement under the system of school government which has heretofore obtained in some of the great cities of the country. This is not surprising. It is only the logical result of the rapid growth of cities, of a marvelous advance in knowledge of what is needed in the schools, of the antagonism of selfish interests by which all public administration, and particularly school administration, is encompassed, and of the lack of plan and system, the confusion of powers, the absence of individual responsibility, in the government of a system of schools. By the census of 1890 there are seven cities in the United States, each with a population greater than any one of sixteen States. The aggregate population of twelve cities exceeds the aggregate population of twenty States. Government for education certainly requires as strong and responsible an organization as government for any other purpose. These great centers of population, with their vast and complex educational problems, have passed the stage when government by the time-honored commission will suffice. No popular government ever determined the policy and administered the affairs of such large bodies of people successfully, ever transacted such a vast volume of business satisfactorily, ever promoted high and beneficent ends, ever afforded protection to the rights of each individual of the great multitude, unless in its plan of organization there was an organic separation of executive, legislative, and judicial functions and powers. All the circumstances of the case, and the uniform experience of the world, forbid our expecting any substan-

tial solution of the problem we are considering until it is well settled in the sentiments of the people that the school systems of the greatest cities are only a part of the school systems of the States of which these cities form a part, and are subject to the legislative authority thereof; until there is a plan of school government in each city which differentiates executive acts from legislative functions; which emancipates the legislative branch of that government from the influence of pelf seekers; which fixes upon individuals the responsibility for executive acts, either performed or omitted; which gives to the intelligence of the community the power to influence legislation and exact perfect and complete execution; which affords to every citizen whose interests are ignored or whose rights are invaded a place for complaint and redress, and which puts the business interests upon a business footing, the teaching upon an expert basis, and gives to the instruction that protection and encouragement which is vital to the development of all professional and scientific work.

We have undertaken to indicate the general principles which we think should be observed in setting up the framework of government of a large city school system. While we have no thought that any precise form of organization which could be suggested would, in all details, be imperative, we are confident that the form or plan of organization is of supreme consequence, and that any which disregards the principles we have pointed out will work to disadvantage or lead to disaster.

ANDREW S. DRAPER,

President of the Illinois State University, Champaign, Ill.

W. B. POWELL,

Superintendent of Schools, Washington, D. C.

A. B. POLAND,

State Superintendent of Public Instruction, Trenton, N. J.

I find myself in general accord with the doctrines of the report. There is only one feature of it from which I feel obliged to dissent, and that is an important though not necessarily a vital one. I refer to the office of school director. I see no need of such an officer elected by the people, and I do see the danger of his becoming a part of the political organization for the dispensation of patronage.

All power and authority in school affairs should reside ultimately in the board of education, consisting of not more than eight persons, appointed by the mayor of the city, to hold office four years, two members retiring annually and eligible for reappointment once and no more. This board should appoint as its chief officer a superintendent of instruction, whose tenure should be during good behavior and efficiency, and whose powers and duties should be to a large extent defined by statute law, and not wholly or chiefly by the regulations of the board of education. The superintendent of instruction should have

a seat and voice but not a vote in the board of education. The board of education should also appoint a business agent, and define his powers and duties in relation to all matters of buildings, repairs, and supplies, substantially as set forth in the report in relation to the school director.

All teachers should be appointed and annually reappointed or recommended by the superintendent of instruction until after a sufficient probation they are appointed on a tenure during good behavior and efficiency.

All matters relating to courses of study, text-books, and examinations should be left to the superintendent and his assistants, constituting a body of professional experts who should be regarded as alone competent to deal with such matters, and should be held accountable therefor to the board of education only in a general way, and not in particular details.

EDWIN P. SEAVER,
Superintendent of Schools, Boston, Mass.

I concur in the recommendations of the subcommittee on the organization of city school systems, as summarized in the concluding portion of the report, omitting in item third the words: "And that it be constituted of two branches, acting against each other." Omit fifth: "But we think it preferable that he be chosen in the same way that members of the board are chosen and be given veto power upon the acts of the board." I recommend that the veto power be given to the president of the board.

ALBERT G. LANE,
Superintendent of Schools, Chicago, Ill.

CHAPTER XIV.

VERBATIM REPORTS OF RECITATIONS IN ARITHMETIC AND LANGUAGE IN THE SCHOOLS OF KANSAS CITY, MISSOURI.

J. M. GREENWOOD, Superintendent.

INTRODUCTION.

The foregoing report of the committee of fifteen, which is printed in full, contains expressions of dissent by some of the members of the subcommittees. Among them is the dissenting vote of Supt. James M. Greenwood of Kansas City, Mo., a member of the subcommittee on correlation of studies. He claims that in teaching arithmetic, fractions may be taught with almost the same facility as whole numbers. In order to permit professional teachers to judge understandingly of the methods Mr. Greenwood advocates in teaching arithmetic, and to prove his assertion correct, he had stenographic reports taken of lessons given by teachers under his direction in the Kansas City schools. These reports are here appended as a very valuable supplement to the report of the committee of fifteen on correlation of studies, with the hope that they may induce other teachers and supervisors to direct their attention to the problem of simplifying methods of teaching and thus save time for other branches, notably for the earlier introduction of algebra.

Superintendent Greenwood adds a number of lessons on language and grammar, taken down in shorthand also. These lessons are well adapted to illustrate the method in vogue in good schools in this country; hence will aid teachers in establishing a model of intellectual training through the study to the English language. The correctness of the accounts here offered is vouched for by the teachers and the principals of the respective schools in which the lessons were given. The age of the pupils is also explicitly stated in each case. Mr. Greenwood wishes acknowledgment to be made to principal J. C. Hisey of the Scarritt school, Kansas City, as the chief author of the details of the scheme of number work here illustrated.—Editor.

HUMBOLDT SCHOOL—MISS SHAW, TEACHER.

[March 26, 1895—Class A, grade first—8½ months in school.]

Teacher. You may place eight one-foot rulers on the table.—(Louisa does so.)

Teacher. Class may count them.—Class. One, two, three, four, five, six, seven, eight.

Teacher. You may form squares with the rulers.—(Boyd does so.)



Q. How many squares did you make with eight rulers?—Boyd. I made two squares with eight rulers.

Q. How many rulers did it take to make one square?—Boyd. It took four rulers to make one square.

Q. Four rulers and four rulers are how many rulers?—Willie. Four rulers and four rulers are eight rulers.

Q. Two times four rulers are how many rulers?—Fred. Two times four rulers are eight rulers.

Q. What two numbers added together make eight?—Freda. Four and four added together make eight.

Teacher. You may form triangles with the rulers.—(Joy L. does so.)



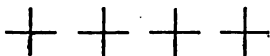
Joy L. I made two triangles and two rulers left over with eight rulers.

Q. How many rulers did you use in making one triangle?—Joy L. I used three rulers in making one triangle.

Q. What three numbers added together make eight?—Thomas. Three and three and two added together make eight.

Q. In eight there are how many threes?—Boyd. In eight there are two and two-thirds threes.

Teacher. You may form crosses with the rulers.—(Olga does so.)



Olga. With eight rulers I have made four crosses.

Q. How many rulers did she use in making one cross?—Lula. She used two rulers in making one cross.

Q. Two rulers and two rulers and two rulers and two rulers are how many rulers?—Della. Two rulers and two rulers and two rulers and two rulers are eight rulers.

Q. Four times two rulers are how many rulers?—Charley. Four times two rulers are eight rulers.

Q. In eight there are how many twos?—Lena. In eight there are four twos.

Teacher. You may place the rulers to form a straight line on the table.—(Joy H. does so.)

Q. How long is that line?—Charley. That line is eight feet long.

Teacher. Fred, you may come and separate this line into two equal parts.—(Fred does so.)

Q. How long is each part?—Charley. Each part is four feet long.

Q. What is one-half of eight feet?—Fred. One-half of eight feet is four feet.

Teacher. Anna, you may divide the line into four equal parts.—(Anna does so.)

Q. How long is each part?—Anna. Each part is two feet long.

Q. What is one-fourth of eight feet?—Boyd. One-fourth of eight feet is two feet.

Teacher. You may come to the table and show three-fourths of eight feet.—(Anna does so.)

Q. In three-fourths of eight feet there are how many feet?—Anna. In three-fourths of eight feet there are six feet.

Teacher. Fred, you may come to the table and divide the line into eight equal parts.—(Fred does so.)

Fred. I have divided the line into eight equal parts.

Q. How long is each part?—Fred. Each part is one foot long.

Q. What is one-eighth of eight feet?—Charley. One-eighth of eight feet is one foot.

(Teacher straightens the rulers.)

Teacher. Louisa may come to the table and separate the line to show how many yards in eight feet.—(Louisa does so.)

Louisa. In eight feet there are two and two-thirds yards.

Q. In seven feet there are how many yards?—Fred. In seven feet there are two and one-third yards.

Q. In six feet there are how many yards?—Charley. In six feet there are two yards.

Q. In five feet there are how many yards?—Fred. In five feet there are one and two-thirds yards.

Q. In four feet there are how many yards?—Boyd. In four feet there are one and one-third yards.

Q. In three feet there are how many yards?—Charley. In three feet there is one yard.

Q. In two feet there are how many yards?—Olga. In two feet there are two-thirds of a yard.

Q. In one foot there are how many yards?—Fred. In one foot there is one-third of a yard.

Q. In two and two-thirds yards there are how many feet?—Joy L. In two and two-thirds yards there are eight feet.

Q. In one and two-thirds yards there are how many feet?—Anna. In one and two-thirds yards there are five feet.

Q. In two yards there are how many feet?—Joy H. There are six feet in two yards.

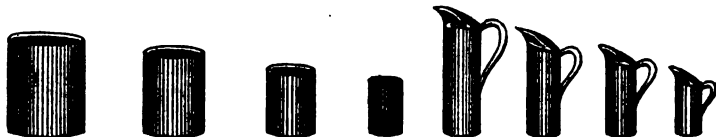
Q. In one and one-third yards there are how many feet?—Anna. In one and one-third yards there are four feet.

Q. In two-thirds of a yard there are how many feet?—Joy L. In two-thirds of a yard there are two feet.

Q. In one-third of a yard there are how many feet?—Ivy. In one-third of a yard there is one foot.
Teacher. You may place eight measures of different sizes on the table.—(Louisa does so.)



Teacher. You may make two groups of these measures.—(Joy L. does so.)



Q. How many kinds of measures do you see?—Fred. I see two kinds of measures.

Q. What are they?—Fred. They are liquid measures and dry measures.

Q. What two kinds of material are these measures made of?—Thomas. These measures are made of wood and tin.

Q. How many wooden measures do you see?—Thomas. I see four wooden measures.

Q. How many tin measures do you see?—Ivy. I see four tin measures.

Q. Four wooden measures and four tin measures are how many measures?—Charley. Four wooden measures and four tin measures are eight measures.

Teacher. Begin by placing the smallest measures together and see how many groups you can make.—(Anna does so.)



Anna. I can make four groups with eight measures.

Q. What is each group made up of?—Louisa. Each group is made up of one wooden measure and one tin measure.

Q. Two measures and two measures and two measures and two measures are how many measures?—Fred. Two measures and two measures and two measures and two measures are eight measures.

Q. Four times two measures are how many measures?—Charley. Four times two measures are eight measures.

Teacher. You may place the two largest measures on the floor.—(Edna places a gallon and a half-bushel measure on the floor.)

Q. How many measures are left on the table?—Olga. There are six measures left on the table.

Q. Six measures and two measures are how many measures?—Louisa. Six measures and two measures are eight measures.

Teacher. You may place another measure on the floor with the other group. How many measures are left on the table?—Jim. There are five measures left on the table.

Q. Five measures and three measures are how many measures?—Max. Five measures and three measures are eight measures.

Q. How many of each kind of measures are left on the table?—Boyd. There are three tin measures and two wooden measures left on the table.

Q. Three tin measures and two wooden measures and the three measures on the floor are how many measures?—Anna. Three tin measures and two wooden measures and the three measures on the floor are eight measures.

Q. What three numbers added together make eight?—Fred. Three and three and two added together make eight.

Q. In eight there are how many threes?—Joy L. In eight there are two and two-thirds threes.

Teacher. You may place eight measures all the same size on the table. (Stella places eight tin pint measures on the table.)



Teacher. You may fill them with water.—(Louisa fills them with water.) I have eight pints of water on the table.

Teacher. You may find a measure that you think will hold eight pints of water.—Fred. I think this measure will hold eight pints of water:



Teacher. You may see if you can put eight pints of water into this measure.—(Anna does so, and the measure just holds it.) I can put eight pints of water into this gallon measure.

Q. Can you put more water into this gallon measure?—Della. No 'm.

Q. How many pints of water will fill a gallon measure?—Louisa. Eight pints of water will fill one gallon measure.

Q. You may find one-eighth of the gallon of water.—(Olga fills one pint measure with water out of the gallon measure.) This is one pint, which is one-eighth of a gallon of water.

Q. You may find two-eighths of a gallon of water.—(Fred fills another pint measure.) Two pints of water are two-eighths of a gallon of water.

Q. You may find three-eighths of a gallon of water.—(Anna fills another pint measure.) Three pints are three-eighths of a gallon of water.

Q. You may find four-eighths of a gallon of water.—(Thomas fills another pint measure.) Four pints of water are four-eighths of a gallon of water.

Q. You may find five-eighths of that gallon of water.—(Charley fills another pint of water.) Five pints of water are five-eighths of a gallon of water.

Q. You may find six-eighths of that gallon of water.—(Lula fills the sixth pint of water.) Six pints of water are six-eighths of a gallon of water.

Q. You may find seven-eighths of that gallon of water.—(Freda fills another pint of water from the gallon measure.) Seven pints of water are seven-eighths of a gallon of water.

Q. Find eight-eighths of that gallon of water.—(Joy L. fills the last pint measure with water.) Eight pints of water are eight-eighths of a gallon of water, or one gallon.

Teacher. You may come to the table and find one-eighth of a gallon of water.—(Boyd lifts up a pint measure from the table.)

Q. How many pints of water in one-half of a gallon of water?—Boyd. There are four pints of water in one-half of a gallon of water.

Q. In one gallon of water there are how many halves?—Anna. In one gallon of water there are two halves.

Q. How many one-fourths in one-half of a gallon of water?—Joy L. In one-half of a gallon of water there are two one-fourths.

Q. How many one-eighths in one-half of a gallon of water?—Joy H. In one-half of a gallon of water there are four one-eighths.

Q. Show four-eighths of a gallon of water.—(Isy counts out one, two, three, four pints of water.)

Q. Show three-fourths of a gallon of water.—(Anna shows two pint measures, one-fourth; four pint measures, two-fourths; six pint measures, three-fourths of a gallon of water.)

Q. Show how many one-fourths in three-fourths of a gallon of water.—Louisa. In three-fourths of a gallon of water there are three one-fourths of a gallon of water.

Q. You may come to the table and show how many one-eighths in three-fourths of a gallon of water.—(Freda points to six pint measures.) There are six one-eighths in three-fourths of a gallon of water.

Q. In eight pints there are how many gallons?—Louisa. In eight pints there is one gallon.

Q. In seven pints there are how many gallons?—Freda. In seven pints there are seven-eighths of a gallon.

Q. In six pints there are how many gallons?—Boyd. In six pints there are six-eighths or three-fourths of a gallon of water.

- eight tin pint Q. In five pints there are how many gallons?—Charley. In five pints there are five eighths of a gallon.
 2. In four pints there are how many gallons?—Olga. In four pints there are four-eighths or one half a gallon.
 3. In three pints there are how many gallons?—Iey. In three pints there are three-eighths of a gallon.
 4. In two pints there are how many gallons?—Charley. In two pints there are two eighths or one-fourth of a gallon.
 Q. In one pint there are how many gallons?—Stella. In one pint there is one-eighth of a gallon.
 Q. One-fourth of a gallon and one-eighth of a gallon are what part of a gallon?—Louisa. One-fourth of a gallon and one-eighth of a gallon are three eighths of a gallon.
 5. Three-eighths of a gallon and one-eighth of a gallon are what part of a gallon?—Stella. Three-eighths of a gallon and one-eighth of a gallon are one-half of a gallon.
 eight pints of Q. One-half of a gallon and one-eighth of a gallon are what part of a gallon?—Della. One-half of a gallon and one-eighth of a gallon are five-eighths of a gallon.
 I think this Q. One-half of a gallon and one-fourth of a gallon are what part of a gallon?—Freda. One-half of a gallon and one-fourth of a gallon are six-eighths or three-fourths of a gallon.
 Q. Five-eighths of a gallon and one-fourth of a gallon are what part of a gallon?—Charley. Five-eighths of a gallon and one-fourth of a gallon are seven-eighths of a gallon.
 Q. Three-fourths of a gallon and one-eighth of a gallon are what part of a gallon?—Freda. Three-fourths of a gallon and one-eighth of a gallon are seven-eighths of a gallon.
 Q. Seven-eighths of a gallon and one-eighth of a gallon are what part of a gallon?—Anna. Seven-eighths of a gallon and one-eighth of a gallon are one gallon.
 Q. In eight-eighths of a gallon of water there are how many gallons of water?—Joy H. In eight-eighths of a gallon of water there is one gallon of water.
 Q. In eight-eighths of a gallon of water there are how many one-fourths?—Louisa. In eight-eighths of a gallon of water there are four one-fourths of a gallon of water.
 does so, and Q. In six-eighths of a gallon of water there are how many one-fourths of a gallon of water?—Olga. In six-eighths of a gallon of water there are three one-fourths of a gallon of water.
 will fill one Q. In one-half of a gallon of water there are how many one-fourths of a gallon of water?—Freda. In one-half of a gallon of water there are two one-fourths of a gallon of water.
 ater out of Q. In one-half of a gallon of water there are how many one-eighths?—Anna. In one-half of a gallon of water there are four one-eighths of a gallon of water.
 so pints of Q. One-eighth of a gallon of water taken from one-half of a gallon of water leaves what?—Freda. One-eighth of a gallon of water taken from one-half of a gallon of water leaves three-eighths of a gallon of water.
 three pints Q. One-fourth of a gallon of water taken from one-half of a gallon of water leaves what?—Louisa. One-fourth of a gallon of water taken from one-half of a gallon of water leaves one-fourth of a gallon of water.
 re.) Four Q. One-eighth of a gallon of water taken from one-fourth of a gallon of water leaves what?—Joy L. One-eighth of a gallon of water taken from one-fourth of a gallon of water leaves one-eighth of a gallon of water.
 re.) Five Q. One-fourth of a gallon of water taken from five-eighths of a gallon of water leaves what?—Freda. One-fourth of a gallon of water taken from five-eighths of a gallon of water leaves three-eighths of a gallon of water.
 Six pints Q. One-fourth of a gallon taken from seven-eighths of a gallon leaves what?—Charley. One-fourth of a gallon taken from seven-eighths of a gallon leaves five-eighths of a gallon.
 from the Q. One-half and one-fourth are what?—Olga. One-half and one-fourth are three-fourths.
 .) Eight Q. One-fourth and one-eighth are what?—Olga. One-fourth and one-eighth are three-eighths.
 up a pint Q. Three-eighths and one-fourth are what?—Jim. Three-eighths and one-fourth are five-eighths.
 of water Q. Five-eighths and one-fourth are what?—Charley. Five-eighths and one-fourth are seven-eighths.
 are two Q. In six-eighths there how many one-eighths?—Charley. In six-eighths there are six one-eighths.
 f water Q. In six-eighths there how many one-fourths?—Freda. In six-eighths there are three one-fourths.
 water Q. In one-half there are how many one-eighths?—Iey. In one-half there are four one-eighths.
 .) Eight Q. In one-fourth there are how many one-eighths?—Boyd. In one-fourth there are two one-eighths.
 r pint Q. In six-eighths there are how many three-eighths?—Freda. In six-eighths there are two three-eighths.
 of a Q. One-fourth taken from one-half leaves what?—Charley. One-fourth taken from one-half leaves one-fourth.
 er.— Q. One-half taken from three-fourths leaves what?—Boyd. One-half taken from three-fourths leaves one-fourth.
 ater. Q. One-fourth taken from seven-eighths leaves what?—Joy L. One-fourth taken from seven-eighths leaves five-eighths.
 is of a Q. One-fourth taken from five-eighths leaves what?—Anna. One-fourth taken from five-eighths leaves three-eighths.

Teacher. Tell the number of gallons in each number of pints you see in the table:

3 pints	} = gallon	In 3 pints there are three-eighths of a gallon.
4 pints		In 4 pints there are four-eighths or one-half of a gallon.
5 pints		In 5 pints there are five-eighths of a gallon.
8 pints		In 8 pints there is one gallon.
6 pints		In 6 pints there are six-eighths or three-fourths of a gallon.
2 pints		In 2 pints there are two-eighths or one-fourth of a gallon.
7 pints		In 7 pints there are seven-eighths of a gallon.
1 pint		In 1 pint there is one-eighth of a gallon.

Teacher. You may tell the number of gallons in each number of quarts you see in the table:

5 quarts	} = gallons	In 5 quarts there are one and one-fourth gallons.
3 quarts		In 3 quarts there are three-fourths of a gallon.
1 quart		In 1 quart there is one-fourth of a gallon.
6 quarts		In 6 quarts there are six-fourths or one and one-half gallons.
8 quarts		In 8 quarts there are two gallons.
4 quarts		In 4 quarts there is one gallon.
7 quarts		In 7 quarts there are one and three-fourths gallons.
2 quarts		In 2 quarts there are two-fourths or one-half of a gallon.

Teacher. You may tell the number of bushels in each number of pecks you see in this table:

3 pecks	} = bushels	In 3 pecks there are three-fourths of a bushel.
7 pecks		In 7 pecks there are one and three-fourths bushels.
9 pecks		In 9 pecks there are two and one-fourth bushels.
4 pecks		In 4 pecks there is one bushel.
6 pecks		In 6 pecks there are one and one-half bushels.
8 pecks		In 8 pecks there are two bushels.
5 pecks		In 5 pecks there are one and one-fourth bushels.
1 peck		In 1 peck there is one-fourth of a bushel.

Teacher. You may tell the number of pecks in each number of quarts in this table.—Joy H.:

8 quarts	} = peck	In 8 quarts there is one peck.
1 quart		In 1 quart there is one-eighth of a peck.
7 quarts		In 7 quarts there are seven-eighths of a peck.
2 quarts		In 2 quarts there is one-fourth of a peck.
6 quarts		In 6 quarts there are three-fourths of a peck.
3 quarts		In 3 quarts there are three-eighths of a peck.
5 quarts		In 5 quarts there are five-eighths of a peck.
4 quarts		In 4 quarts there is one-half of a peck.

Teacher. You may tell the number of weeks in each number of days in this table.—Joy L.:

1 day	} = weeks	In 1 day there is one-seventh of a week.
3 days		In 3 days there are three-sevenths of a week.
2 days		In 2 days there are two-sevenths of a week.
4 days		In 4 days there are four-sevenths of a week.
5 days		In 5 days there are five-sevenths of a week.
7 days		In 7 days there is one week.
6 days		In 6 days there are six-sevenths of a week.
8 days		In 8 days there are one and one-seventh weeks.
9 days		In 9 days there are one and two-sevenths weeks.

Teacher: You may tell me the number of months in each number of weeks in this table:

1 week	} = months	In 1 week there is one-fourth of a month.
3 weeks		In 3 weeks there are three-fourths of a month.
2 weeks		In 2 weeks there is one-half of a month.
4 weeks		In 4 weeks there is one month.
5 weeks		In 5 weeks there are one and one-fourth months.
7 weeks		In 7 weeks there are one and three-fourths months.
6 weeks		In 6 weeks there are one and one-half months.
8 weeks		In 8 weeks there are two months.
9 weeks		In 9 weeks there are two and one-fourth months.

Teacher: You may tell the number of yards in each number of feet in this table.—Charley:

1 foot	} = yards	In 1 foot there is one-third of a yard.
3 feet		In 3 feet there is one yard.
2 feet		In 2 feet there are two-thirds of a yard.
4 feet		In 4 feet there are one and one-third yards.
5 feet		In 5 feet there are one and two-thirds yards.
7 feet		In 7 feet there are two and one-third yards.
6 feet		In 6 feet there are two yards.
8 feet		In 8 feet there are two and two-thirds yards.
9 feet		In 9 feet there are three yards.

Q. Compare six with the others.—Robert S. 6 is 3 twos; 6 is $\frac{3}{2}$ of 4; 6 is once itself; 6 is $\frac{3}{2}$ of 8; 6 is $\frac{2}{3}$ of 10; 6 is $\frac{1}{2}$ of 12; 6 is $\frac{2}{3}$ of 14; 6 is $\frac{3}{4}$ of 16; 6 is $\frac{2}{5}$ of 18; 6 is $\frac{3}{7}$ of 20.

3, 3, 3, 3, 3, 3, 3, 3, 3
 3, 3, 3, 3, 3, 3, 3, 3
 3, 3, 3, 3, 3, 3, 3
 3, 3, 3, 3, 3, 3
 3, 3, 3, 3, 3
 3, 3, 3, 3
 3, 3, 3
 3, 3
 3
 (Table on blackboard.)

Q. Pronounce the words in the table of threes.—*Ida.* Three, six, nine, twelve, fifteen, eighteen, twenty-one, twenty-four, twenty-seven, thirty.

Q. Give the number of threes in each number.—Willie. One three is 3; 2 threes are 6; 3 threes are 9; 4 threes are 12; 5 threes are 15; 6 threes are 18; 7 threes are 21; 8 threes are 24; 9 threes are 27; 10 threes are 30.

Q. Compare three with the others.—Annie. 3 is once itself; 3 is $\frac{1}{2}$ of 6; 3 is $\frac{1}{3}$ of 9; 3 is $\frac{1}{4}$ of 12; 3 is $\frac{1}{5}$ of 15; 3 is $\frac{1}{6}$ of 18; 3 is $\frac{1}{7}$ of 21; 3 is $\frac{1}{8}$ of 24; 3 is $\frac{1}{9}$ of 27; 3 is $\frac{1}{10}$ of 30.

Q. Compare six with the others in that table.—Eva. 6 is once itself; 6 is $\frac{2}{3}$ of 9; 6 is $\frac{1}{2}$ of 12; 6 is $\frac{2}{3}$ of 15; 6 is $\frac{1}{3}$ of 18; 6 is $\frac{2}{7}$ of 21; 6 is $\frac{1}{4}$ of 24; 6 is $\frac{2}{9}$ of 27; 6 is $\frac{1}{5}$ of 30.

Q. Compare nine with the others.—Willie S. 9 is 3 threes; 9 is $\frac{3}{2}$ of 6; 9 is once itself; 9 is $\frac{3}{4}$ of 12; 9 is $\frac{2}{3}$ of 15; 9 is $\frac{1}{2}$ of 18; 9 is $\frac{3}{7}$ of 21; 9 is $\frac{3}{8}$ of 24; 9 is $\frac{1}{3}$ of 27; 9 is $\frac{3}{10}$ of 30.

Q. 9 is $\frac{3}{4}$ of what number?—George. 9 is $\frac{3}{4}$ of 12.

Q. 6 is $\frac{1}{3}$ of what number?—Mat. 6 is $\frac{1}{3}$ of 18.

Q. 9 is $\frac{2}{3}$ of what number?—Ida. 9 is $\frac{2}{3}$ of 6.

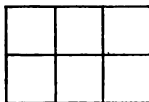
Q. 9 is $\frac{2}{3}$ of what number?—Eva. 9 is $\frac{2}{3}$ of 21.

Q. If 8 cents will buy $\frac{1}{4}$ of a yard, what will 4 cents buy?—Cyril. If 8 cents will buy $\frac{1}{4}$ of a yard, 4 cents will buy $\frac{1}{8}$ of a yard.

Q. What will 12 cents buy?—Victor. If 8 cents will buy $\frac{1}{4}$ yard, 12 cents will buy $\frac{3}{4}$ of a yard.

Q. What will 16 cents buy?—Hugh. If 8 cents will buy $\frac{1}{2}$ yard, 16 cents will buy 1 yard.

Q. What will 20 cents buy?—Ida. If 8 cents will buy $\frac{1}{4}$ yard, 20 cents will buy $1\frac{1}{2}$ yards.

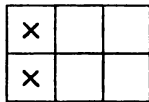


Q. Tell me into how many parts this diagram is divided?—Gladys. Into six parts.

Q. How many sixths are left if you take $\frac{1}{2}$ —Ida. $\frac{1}{3}$ are left.

Q. Compare $\frac{1}{2}$ with the rest of the diagram.—Cyril. $\frac{1}{2}$ is $\frac{1}{2}$ of $\frac{1}{2}$.

(The teacher here marked two of the divisions of the figure.)



Q. What part of the diagram has crosses?—Willie. One-third has crosses.

Q. You may compare $\frac{1}{2}$ with $\frac{1}{3}$.—Mat. $\frac{1}{2}$ is $\frac{2}{3}$ of $\frac{1}{3}$.

Q. $\frac{1}{2}$ is what part of $\frac{1}{4}$?—Robert. $\frac{1}{2}$ is $\frac{1}{2}$ of $\frac{1}{4}$.

Q. $\frac{1}{2}$ is what part of $\frac{1}{4}$?—Aileen. $\frac{1}{2}$ is $\frac{1}{2}$ of $\frac{1}{4}$.

$428 \times 3 = ?$

Q. Read the problem.--Chauncey. Four hundred twenty-eight multiplied by three equals what? 3 times 8 are 24, write the 4 and add the 2; 3 times 2 are 6 and 2 are 8, write the 8; 3 times 4 are 12, write the 12. **Answer.** 1,284.

(Twenty pupils of the class of 24 had right answers.)

Teacher. Write this problem on your slates and see how many can add it [dictated]:

426

725

283

364

572

657

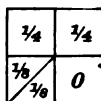
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(Twenty-one of a class of 24 solved the problem correctly.)

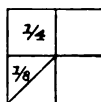
JEFFERSON SCHOOL—MISS SPENCER, TEACHER.

[A Class, grade first—Pupils have been in school 7 months.]

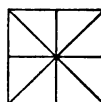
Q. You may tell me what part $\frac{1}{2}$ is of $\frac{3}{4}$. Draw diagram.—A. $\frac{1}{2}$ is $\frac{2}{3}$ of $\frac{3}{4}$.



Q. $\frac{1}{2}$ is what part of $\frac{1}{3}$? Draw diagram.—A. $\frac{1}{2}$ is $\frac{2}{3}$ of $\frac{1}{3}$.



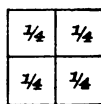
Q. You may make $\frac{1}{2}$. Draw diagram.—A.



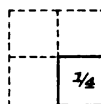
Q. $\frac{1}{2}$ minus $\frac{1}{3}$ equals what?—A. $\frac{1}{2}$ minus $\frac{1}{3}$ equals $\frac{1}{6}$.

Q. $\frac{1}{3}$ are equal to how much?—A. are equal to $\frac{1}{3}$.

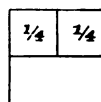
Q. You may make a diagram to show $\frac{1}{3}$.—A.



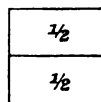
Q. Erase $\frac{1}{3}$ and show what part is left.—A.



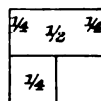
Q. $\frac{1}{2}$ and $\frac{1}{3}$ equals what?—A. $\frac{1}{2}$ and $\frac{1}{3}$ equals $\frac{5}{6}$.



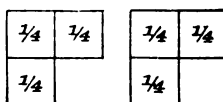
Q. $\frac{1}{2}$ and $\frac{1}{2}$ equals what?—A. $\frac{1}{2}$ and $\frac{1}{2}$ equals 1.



Q. $\frac{1}{2}$ and $\frac{1}{3}$ equals what?—A. $\frac{1}{2}$ and $\frac{1}{3}$ equals $\frac{5}{6}$.



Q. $\frac{1}{2}$ and $\frac{1}{3}$ equals what?—A. $\frac{1}{2}$ and $\frac{1}{3}$ equals $1\frac{1}{6}$.



Q. $\frac{3}{4}$ and $\frac{1}{4}$ equals what?—A. $\frac{3}{4}$ and $\frac{1}{4}$ equals 1.

$\frac{3}{4}$	$\frac{1}{4}$
$\frac{3}{4}$	$\frac{1}{4}$

Children wrote the following numbers and had answers in their minds almost at the time the teacher pronounced the last number:

$$\begin{aligned} 6+5+9+4+4+2+7 &= 37 \\ 8+4+8+9+1+6+4 &= 40 \\ 6+5+4+5+7+3+7 &= 37 \end{aligned}$$

$$6,945,348 \div 3 = 2,315,116.$$

(In less than half minute the majority of class of 30 had formed the division correctly on the board.)

$$\begin{array}{r} 46357 \\ \times 32 \\ \hline 92714 \\ 139071 \\ \hline 1483424 \end{array}$$

(In one minute about $\frac{2}{3}$ of the class had the correct answer.)

Q. If I had a board 15 inches long, how many inches would I cut off to leave a foot?—A. You would have to cut off 3 inches.

Q. There were 9 birds on a tree and $\frac{1}{3}$ of the birds flew away. How many remained?—A. If there were 9 birds on a tree and $\frac{1}{3}$ of them flew away, there were 6 left.

Q. There were 12 boys in a class and I sent $\frac{1}{3}$ of them to their seats. How many remained?—A. If you had 12 boys in a class and sent $\frac{1}{3}$ to their seats, you would have 9 remaining.

Q. If a book costs a dime, how many books can I buy for 30 cents?—A. If a book costs a dime, you can buy 3 for 30 cents.

(Bell rang for dismissal.)

WOODLAND SCHOOL—MISS KENNEDY, TEACHER.

[March 9, 1895—Class A, grade first—Children in school 7 months.]

Q. 14

8 What number do you take away from 14 so it will leave 8?—Fletcher. 6. Take away 6 from 14 leaves 8.

Q. 7

+

12 What number goes with seven to make twelve?—Ethel. 5. 5 and 7 are 12.

Q. 748

+ 234

(Answer obtained by mental process.)—Jean. 982.

Q. Now, we will see if this is correct. What made 982?—Jean. 748 and 234 equals 982.

Q. Give an example.—Ray. If there were \$748 in one bank and \$234 in another bank, there will be \$982 in both.

Q. 892

—535

(Answer obtained by mental process.)—Edgar. Answer, 357 [steps to the board and writes the number].

Q. Now, we will see if this is correct.—Mae. 5 from 2 you can not take, take 1 from 9 leaves 8, 5 from 12 leaves 7, 3 from 8 leaves 5, 5 from 8 leave 3. Answer, 357.

Q. How do you get 357?—John. From 892 take away 535 and there will be 357 left.

Q. Give an example.—Maxwell. If there are 892 passengers on a ship that was crossing the ocean, and the ship was wrecked, and 535 swam to the shore, there would be 357 lost.

Q. 538

+

872 Supply the missing number. (Answer obtained by mental process.)—Ethel. Answer, 744. Second answer, 334.

Q. Now, we will see if either is correct.—Walter. We must add 4 to the 8 to get 12, 3 and 3 and the 1 makes 7, and 3 to the 5 to get 8. Answer, 334.

Q. 829

—

346 Supply the subtrahend.—(Answer obtained by mental process.)—Myrtle. Answer, 483.

(Child proves.) 3 from 9 leaves 6, 8 from 2 can not take, take 1 from 8 leaves 7, 8 from 12 leaves 4, 4 from 7 leaves 3. Answer: 433.

Q. Add 9 to these numbers I give you—36, 58.—Lucy. 45 and 67.

Q. How do you add 9 to numbers?—Mae. Subtract 1 from the number in unit's place, and add 1 to the number in ten's place.

Q. Show me how you add 9 to 73.—(Jane goes to the board, takes 1 from the 3 leaves 2, adds 1 to the 7 equals 8.) Answer, 82.

Q. Show me how you add 9 to 47. (Pupil goes to the board and explains.)—Julia. Take 1 from 7 leaves 6, add 1 to the 4 makes 5. 47 and 9 are 56. (This is a labor-saving device for adding 9 to numbers.)

Q. How do you add 10 to numbers?—Edgar. Add 1 to the number in ten's place.

Q. Add 10 to these numbers—25, 47, 69.—Holland. 35, 57, 79.

Q. Show me how you add 10 to 28.—Mary. Add 1 to the 2 makes 3; 28 and 10 are 38.

Q. Add these numbers—38 and 6; 37 and 5.—Herbert. 38 and 6 are 44; 37 and 5 are 42.

Q. Add: 876

5567

768

4879

Grace. 9, 17, 24, 30; write the naught, add 3; 3, 10, 16, 22, 29, write 9, add 2; 2, 10, 17, 22, 30, write the naught, add 3; 3, 7, 12, write the 12. The sum is 12,090.

Q. 8420

—687

Maxwell. 7 from 0 can not take, take 1 from 2 leaves 1, 7 from 10 leaves 3, 8 from 1 can not take, take 1 from 4 leaves 3, 8 from 11 leaves 3, 6 from 3 can not take, take 1 from 8 leaves 7, 6 from 13 leaves 7. Answer, 7,733.

Q. $\frac{1}{3}$ of 9 = ?—Wilber. 6 is $\frac{1}{3}$ of 9.

Q. $\frac{1}{3}$ of 15 = ?—Harry. 10 is $\frac{1}{3}$ of 15.

Q. $\frac{1}{3}$ of 12 = ?—Edgar. $\frac{1}{3}$ of 12 is 3, and $\frac{2}{3}$ of 12 are 9.

Q. Give three numbers that will make 16.—Fletcher. 5 and 5 and 6.

Q. See if that will make 16.—John. 5 and 5 are 10, and 6 are 16.

Q. How much is one-half dollar?—Ethel. 50 cents.

Q. How much is a quarter of a dollar?—Mae. 25 cents.

Q. One-half dollar and one-quarter dollar are how much?—Jean. One-half dollar and one-quarter dollar are 75 cents.

Q. How many pints in 1 quart?—John. 2 pints.

Q. How many quarts in 1 gallon?—Maxwell. 4 quarts.

Q. How many pints in a gallon?—Ethel. 32 pints.

Q. If you buy a gallon of sirup and it costs 10 cents a pint, how much would you have to pay for a gallon?—Walter. You would have to pay 80 cents for a gallon.

Q. If you had one-fourth of a dollar and two dimes and a nickel, and you went to the store to buy books, the books costing 10 cents apiece, how many books would you get?—Myrtle. 5 books.

Q. If a gallon of oil cost 40 cents, how much would 3 quarts cost?—Lucy. 3 quarts would cost 30 cents.

Q. If there are 25 children in my room, 36 in Miss Black's room, and 44 in Miss Ramsey's room, how many children would there be in the 3 rooms?

(This example was put on the board by the children.)

25

36

44

105

Julia. 4, 10, 15, write the 5 and add the 1; 1, 5, 8, 10, write the 10. If there were 25 children in your room, 36 in Miss Black's room, and 44 in Miss Ramsey's room, there would be 105 in the 3 rooms.

Q. If 79 children belonged in this room, and 6 were absent, how many children were present?—

Julia. 79

—6

73 6 from 9 leaves 3, naught from 7 leaves 7. If there were 79 children that belonged in this room, and 6 were absent, there would be 73 present.

Q. 6947

×3

(Child writes the example on the board.)—Holland. 3 times 7 are 21, write the 1 and add 2; 3 times 4 are 12 and 2 are 14, write the 4 and add the 1; 3 times 9 are 27 and 1 are 28, write the 8 and add the 2; 3 times 6 are 18 and 2 are 20, write the 20. The product is 20,841.

The teacher dictates the following numbers to be written by the pupils: Seven thousand nine hundred forty-six; 7,946. Twenty-five; 25. Four hundred thirty-seven; 437. Six; 6. Eight thousand seven hundred ninety-five; 8,795.

HUMBOLDT SCHOOL—MISS DRAKE, TEACHER.

[March 26, 1895—Class A, grade second.]

Teacher. You may show us a measure one foot long.—John. This measure is one foot long [shows one-foot ruler].

Q. How many inches in that ruler?—John. There are twelve inches in that ruler.

Q. How many inches in two such measures?—Frank. There are twenty-four inches in two such measures.

Q. How many inches in two feet?—Gertrude. There are twenty-four inches in two feet.

Teacher. You may draw a line two feet long.—(John does so.)

Teacher. Test the line. How many inches in that line?—John. There are twenty-four inches in that line.

Teacher. Add enough to that line to make it two and one-half feet long.—(Harry does so.)

Q. How many inches will he have to add?—Joe. He will have to add six inches, or one-half a foot, to make the line two and one-half feet, or thirty inches long.

Teacher. Make the line thirty-two inches long.—(John adds enough to make the line thirty-two inches long.)

Q. How many inches more than two feet is the line now?—John. There are eight inches more than two feet now.

Q. Eight inches are what part of a foot?—Jim. Eight inches are two-thirds of a foot.

Q. How many feet in the line now?—Gertrude. There are two and two-thirds feet in the line thirty-two inches long.

Teacher. Recite how many feet in the number of inches you see written.—Frank:

32 inches	} = feet {	Thirty-two inches are two and two-thirds feet.
30 inches		Thirty inches are two and one-half feet.
16 inches		Sixteen inches are one and one-third feet.
19 inches		Nineteen inches are one and seven-twelfths feet.
24 inches		Twenty-four inches are two feet.
26 inches		Twenty-six inches are two and one-sixth feet.
27 inches		Twenty-seven inches are two and one-fourth feet.
14 inches		Fourteen inches are one and one-sixth feet.
8 inches		Eight inches are two-thirds of a foot.
21 inches		Twenty-one inches are one and three-fourths feet.
10 inches		Ten inches are five-twelfths of a foot.
6 inches		Six inches are one-half of a foot.
9 inches		Nine inches are three-fourths of a foot.

Q. What is the surface of anything?—Paul. The surface of anything is the outside.

Q. How thick is the surface?—Odessa. Surface is not thick at all.

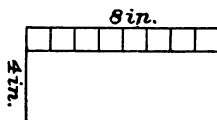
Q. How is surface measured?—Jim. Surface is measured by the square inch, square foot, square yard, or square rod. (The square rod was the greatest square studied.)

Teacher. Show me the surface of your slate.—A. (Child holds up his slate and points to the surface.) This is the surface of my slate.

Q. What shape is your slate?—Tom. My slate is the shape of a rectangle.

Q. What do you mean by the area of your slate?—Joe. I mean the number of square inches in its surface.

Q. How many square inches in a rectangle eight inches long and four inches wide? (John draws diagram.)



Q. State problem. (Child repeats the question.)—John. In a rectangle eight inches long and one inch wide there are eight square inches. In a rectangle eight inches long and four inches wide there are four times eight square inches, which are thirty-two square inches. Therefore, in a rectangle eight inches long and four inches wide, there are thirty-two square inches!

Q. How many yards in thirty feet?—Jim. In thirty feet there are ten yards.

Q. How many yards in two feet?—Joe. In two feet there are two thirds of a yard.

Q. How many yards in thirty-two feet?—Gertrude. In thirty-two feet there are ten and two-thirds yards.

Teacher. Recite how many yards in the number of feet you see written—Charley:

32 feet	} = yards	Thirty-two feet are ten and two-thirds yards.
30 feet		Thirty feet are ten yards.
16 feet		Sixteen feet are five and one-third yards.
19 feet		Nineteen feet are six and one-third yards.
24 feet		Twenty-four feet are eight yards.
26 feet		Twenty-six feet are eight and two-thirds yards.
27 feet		Twenty-seven feet are nine yards.
14 feet		Fourteen feet are four and two-thirds yards.
8 feet		Eight feet are two and two-thirds yards.
21 feet		Twenty-one feet are seven yards.
10 feet		Ten feet are three and one-third yards.
6 feet		Six feet are two yards.
9 feet		Nine feet are three yards.

Q. How is fence measured?—Hunter. Fence is measured by the rod.

Teacher. We will suppose that these two sides of the room up to this mark are a stone wall. How many feet in it? Class may count as Frank measures.—(Frank measures with a yardstick.)

Class. Three feet, six feet, nine feet, twelve feet, fifteen feet, eighteen feet, twenty-one feet, twenty-four feet, twenty-seven feet, thirty feet.

Frank. And two feet more than thirty feet, or thirty-two feet.

Q. How many feet in the stone wall?—Class. There are thirty-two feet in that stone wall.

Q. How many feet will you count for one rod?—Class. Sixteen and one-half feet.

Teacher. Measure the stone wall by rods. Class may count.—Class. Three feet, six feet, nine feet, twelve feet, fifteen feet, sixteen and one-half feet.

Q. How much is that?—Class. One rod. [Continuing.] Three feet, six feet, nine feet, twelve feet, fifteen feet, sixteen and one-half feet.

Q. How many rods is that?—Class. Two rods.

Teacher. But we find that the mark for the two rods comes beyond our wall. How much beyond, Frank?—Frank. One foot beyond the wall.

Q. How much less than two rods are thirty-two feet?—John. Thirty-two feet are one foot less than two rods.

Q. Thirty-two feet are what part of a yard less than two rods?—Sadie. Thirty-two feet are one-third of a yard less than two rods.

Q. Thirty-two feet are how many inches less than two rods?—Jim. Thirty-two feet are twelve inches less than two rods.

Teacher. You may weigh thirty-two ounces of salt.—(Paul weighs it.)

Teacher. Show the weight you have used.—(Paul shows a two-pound weight.)

Q. What weight has he used?—Class. He has used a two-pound weight.

Q. Why has he used a two-pound weight to weigh thirty-two ounces?—Tom. Because there are sixteen ounces in one pound, and two sixteens are thirty-two.

Teacher. Recite how many pounds in the number of ounces you see written.—Joe:

32 ounces	} = pounds	Thirty-two ounces are two pounds.
30 ounces		Thirty ounces are one and seven-eighths pounds.
16 ounces		Sixteen ounces are one pound.
19 ounces		Nineteen ounces are one and three-sixteenths pounds.
24 ounces		Twenty-four ounces are one and one-half pounds.
26 ounces		Twenty-six ounces are one and five-eighths pounds.
27 ounces		Twenty-seven ounces are one and eleven-sixteenths pounds.
14 ounces		Fourteen ounces are seven-eighths of a pound.
8 ounces		Eight ounces are one-half of a pound.
21 ounces		Twenty-one ounces are one and five-sixteenths pounds.
10 ounces		Ten ounces are five-eighths of a pound.
6 ounces		Six ounces are three-eighths of a pound.
9 ounces		Nine ounces are nine-sixteenths of a pound.

Q. One barrel holds how many gallons?—Class. Thirty-one and one-half gallons.

Q. Thirty-two gallons are how many gallons more than one barrel?—Ethel. Thirty-two gallons are one-half gallon more than one barrel.

Q. What is one-half of thirty gallons?—John. One-half of thirty gallons is fifteen gallons.

Q. What is one-half of one and one-half gallons?—Jim. One-half of one and one-half gallons is three-fourths of a gallon.

Q. What is one-half of thirty-one and one-half gallons?—Joe. One-half of thirty-one and one-half gallons is fifteen and three-fourths gallons.

Q. What, then, is one-half of a barrel?—Class. One-half of a barrel is fifteen and three-fourths gallons.

Q. Are thirty-two quarts more or less than thirty-two gallons?—Meyer. Thirty-two quarts are less than thirty-two gallons.

Teacher. Recite how many gallons in the number of quarts you see written.—Julian:

32 quarts	} = gallons	Thirty-two quarts are eight gallons.
30 quarts		Thirty quarts are seven and one half gallons.
16 quarts		Sixteen quarts are two gallons.
10 quarts		Nineteen quarts are four and three-fourths gallons.
24 quarts		Twenty-four quarts are six gallons.
26 quarts		Twenty-six quarts are six and one-half gallons.
27 quarts		Twenty-seven quarts are six and three-fourths gallons.
14 quarts		Fourteen quarts are three and one-half gallons.
8 quarts		Eight quarts are two gallons.
21 quarts		Twenty-one quarts are five and one-fourth gallons.
10 quarts		Ten quarts are two and one-half gallons.
6 quarts		Six quarts are one and one-half gallons.
9 quarts		Nine quarts are two and one-fourth gallons.

Q. Are thirty-two pints more or less than thirty-two quarts?—Joe. Thirty-two pints are less than thirty-two quarts.

Q. How much less?—Joe. Thirty-two pints are just one-half as much as thirty-two quarts.

Teacher. Recite the number of gallons in the number of pints you see written.—Jemie:

32 pints	} = gallons	Thirty-two pints are four gallons.
30 pints		Thirty pints are three and three-fourths gallons.
16 pints		Sixteen pints are two gallons.
19 pints		Nineteen pints are two and three-eighths gallons.
24 pints		Twenty-four pints are three gallons.
26 pints		Twenty-six pints are three and one-fourth gallons.
27 pints		Twenty-seven pints are three and three-eighths gallons.
14 pints		Fourteen pints are one and three-fourths gallons.
8 pints		Eight pints are one gallon.
21 pints		Twenty-one pints are two and five-eighths gallons.
10 pints		Ten pints are one and one-fourth gallon.
6 pints		Six pints are three-fourths of a gallon.
9 pints		Nine pints are one and one eighth gallons.

Q. How much is one-fourth of thirty-two?—Louise. One-fourth of thirty-two is eight.

Q. How much is three-fourths of thirty-two?—Willie. Three-fourths of thirty-two are twenty-four.

Q. How much is one-eighth of thirty-two?—Julian. One-eighth of thirty-two is four.

Q. How much are four-eighths of thirty-two?—John. Four-eighths of thirty-two are sixteen.

Q. How much are five-eighths of thirty-two?—Edna. Five-eighths of thirty-two are twenty.

Q. How much are six-eighths of thirty-two?—Amy. Six-eighths of thirty-two are twenty-four.

Q. What is one-sixteenth of thirty-two?—Hunter. One-sixteenth of thirty-two is two.

Q. How much is one-half of thirty-two?—Irene. One-half of thirty-two is sixteen.

Q. How much are five-sixteenths of thirty-two?—Ethel. Five-sixteenths of thirty-two are ten.

Q. How much are eight-sixteenths of thirty-two?—Frank. Eight-sixteenths of thirty-two are sixteen.

Q. And that is the same as what part of thirty-two?—Claude. Eight-sixteenths of thirty-two are the same as one-half of thirty-two.

Q. Four is what part of thirty-two?—Davie. Four is one-eighth of thirty-two.

Q. Eight is what part of thirty-two?—Meyer. Eight is one-fourth of thirty-two.

Q. Sixteen is what part of thirty-two?—Jaune. Sixteen is one-half of thirty-two.

Q. Two is what part of thirty-two?—Harry. Two is one-sixteenth of thirty-two.

Q. What is one-third of twenty-four?—Joe. One-third of twenty-four is eight.

Q. What are two-thirds of twenty-four?—Paul C. Two-thirds of twenty-four are sixteen.

Q. What is one-third of thirty?—Paul B. One-third of thirty is ten.

Q. What are two-thirds of thirty?—Josie. Two-thirds of thirty are twenty.

Q. What is one-third of thirty-six?—Louise. One-third of thirty-six is twelve.

Q. What is one-sixth of thirty-six?—Willie. One-sixth of thirty-six is six.

Q. What are five-sixths of thirty-six?—Julian. Five-sixths of thirty-six are thirty.

Q. What is one-fourth of twenty-eight?—John. One-fourth of twenty-eight is seven.

Q. What are three-fourths of twenty-eight?—Ethel. Three-fourths of twenty-eight are twenty-one.

Q. $\frac{3}{4} + \frac{1}{4} = ?$ What unit will you use to show me?—Amy. I will use the foot.

Teacher. State the problem.—Amy. Two-thirds of a foot and one-sixth of a foot equal what?—Two-thirds of a foot are eight inches. One-sixth of a foot is two inches. One inch is one-twelfth of a foot. Eight inches are eight-twelfths of a foot. Two inches are two-twelfths of a foot. Eight-twelfths of a foot and two-twelfths of a foot are ten-twelfths of a foot, or five-sixths of a foot. Therefore two-thirds and one-sixth are five-sixths.

Q. $\frac{2}{3} - \frac{1}{6} = ?$ —Jim. One-sixth taken from two-thirds leaves one-half.

Q. $\frac{1}{2}$ of $\frac{1}{3} = ?$ —Tom. One-half of one-sixth equals one-twelfth.

Q. $\frac{1}{2}$ of $\frac{2}{3} = ?$ —Joe. One-half of two-thirds is one-third.

Q. $\frac{1}{2} + \frac{1}{2} = ?$ What unit will you use?—Irene. I will use the dime.

Teacher. State the problem.—Edna. One-half of a dime and two-fifths of a dime equal what?—One-half of a dime is five cents. Two-fifths of a dime are four cents. One cent is one-tenth of a dime. Five cents are five-tenths of a dime. Four cents are four-tenths of a dime. Five-tenths of a dime and four-tenths of a dime are nine-tenths of a dime. Therefore one-half of a dime and two-fifths of a dime are nine tenths of a dime.

(In this problem the child uses pennies, nickel and a dime to illustrate.)

Q. Show me two-fifths of a dime taken from one-half of a dime.—(Child shows five pennies, then moves four away.)

Q. One cent is what part of a dime?—John. One cent is one-tenth of a dime.

Q. Two-fifths of a dime taken from one-half of a dime is what part of a dime?—Amy. Two-fifths of a dime taken from one-half of a dime is one-tenth of a dime.

Q. Show me one fifth of a dime.—(Child shows two pennies.)

Q. Show me one half of one-fifth.—(Child shows one penny.)

Q. What part of a dime is that?—Harry. That is one-tenth of a dime.

Q. Then, one-half of one-fifth is what?—Jim. One-half of one fifth is one tenth.

Q. Show me how many one-fifths of a dime there are in one-half of a dime.—(Child shows on slate.) There are two and one-half one-fifths of a dime in one-half of a dime.

Q. Show me how many two-fifths of a dime in one-half of a dime.—(Child shows on slate.) There are one and one-fourth two fifths of a dime in one half of a dime.

Q. $\frac{1}{2} + \frac{1}{2} = ?$ What unit will you use to solve this problem?—Meyer. I will use a pound of salt.

Q. How many ounces in a pound of salt?—Meyer. There are sixteen ounces in a pound of salt.

Q. State the problem.—Meyer. Five-eighths of a pound of salt and three-sixteenths of a pound of salt are how much? [Weighs out ten ounces of salt and puts in one sack. Weighs out three ounces and puts in another sack.] Five-eighths of a pound of salt are ten ounces. One ounce is one-sixteenth of a pound of salt. Ten ounces are ten-sixteenths of a pound of salt. Three-sixteenths of a pound of salt and ten-sixteenths of a pound of salt are thirteen-sixteenths of a pound of salt. Therefore five-eighths of a pound of salt and three-sixteenths of a pound of salt are thirteen-sixteenths of a pound of salt.

Q. Three-sixteenths of a pound taken from five-eighths of a pound leave what?—Davie. Three-sixteenths of a pound taken from five-eighths of a pound leave seven-sixteenths of a pound.

Q. In thirteen-sixteenths of a pound there are how many three-sixteenths of a pound?—Joe. In thirteen-sixteenths of a pound there are four and one-third three-sixteenths of a pound.

Q. In thirteen-sixteenths of a pound there are how many five-eighths of a pound?—Claude. In thirteen-sixteenths of a pound there are one and three-tenths five-eighths of a pound.

Q. $\frac{2}{3} + \frac{1}{9} = ?$ —Louise. Two-thirds plus one-ninth are seven-ninths.

Q. How can that be shown?—Louise. By using the square yard as a unit.

Q. How many square feet in one square yard?—Hunter. There are nine square feet in one square yard.

Q. Solve the problem.—John. Two-thirds of a square yard are six square feet. One square foot is one-ninth of a square yard. Six square feet are six-ninths of a square yard. Six-ninths of a square yard and one-ninth of a square yard are seven-ninths of a square yard.

Q. One-ninth of a square yard taken from two-thirds of a square yard is what?—Ethel. One-ninth of a square yard taken from two-thirds of a square yard is five-ninths of a square yard.

Q. What part do you change?—Hunter. I change the two-thirds.

Q. Why?—Hunter. In order to make it ninths.

Q. Why do you want it ninths?—Davie. In order to put it with one-ninth.

Q. What is one-third of one-third?—Joe. One-third of one-third is one-ninth.

Q. How many one-ninths in two-thirds?—Harry. There are six one-ninths in two-thirds.

Q. $\frac{1}{2} + \frac{1}{6} = ?$ Edna may recite.—One-third plus one-sixth equals one-half.

Q. $\frac{1}{2} + \frac{1}{6} = ?$ —Edna. One-third divided by one-sixth equals two.

Q. $\frac{1}{2} - \frac{1}{6} = ?$ —Edna. One-third minus one-sixth equals one-sixth.

Q. $\frac{2}{3} + \frac{1}{6} = ?$ —Edna. Two-thirds plus one-sixth equal five-sixths.

Q. $\frac{2}{3} - \frac{1}{6} = ?$ —Edna. Two-thirds minus one-sixth equal one-half.

Q. $\frac{2}{3} \div \frac{1}{6} = ?$ —Edna. Two-thirds divided by one-sixth equal four.

Q. $\frac{1}{2} + \frac{1}{6} = ?$ —Edna. One-half plus one-sixth equals two-thirds.

Q. $\frac{1}{2} - \frac{1}{6} = ?$ —Edna. One-half minus one-sixth equals one-third.

Q. $\frac{1}{2} \div \frac{1}{6} = ?$ —Edna. One-half divided by one-sixth equals three.

Q. $\frac{3}{4} + \frac{1}{6} = ?$ —Edna. Two-thirds plus one-half equal one and one-sixth.

Q. $\frac{3}{4} + \frac{1}{6} = ?$ —Edna. Three-fourths plus one-sixth equal eleven-twelfths.

Q. $\frac{3}{4} \div \frac{1}{6} = ?$ —Edna. Three-fourths divided by one-sixth equal four and one-half.

Q. $\frac{1}{2} + \frac{1}{4} = ?$ —Edna. One-third plus one-fourth equals seven-twelfths.

(The above table was on the board and the child recited the answers readily, with no hesitation whatever.)

Q. What unit did you use in working those problems?—Edna. I used the foot.

Q. What unit would you use in working these problems [teacher points to following table]?—Jim. A gallon of water.

- Q. $\frac{3}{4} + \frac{1}{4} = ?$ —Julian. Five-eighths plus three-eighths equal one.
 Q. $\frac{3}{4} + \frac{1}{4} = ?$ —Julian. Three-fourths plus one-half equal one and one-fourth.
 Q. $\frac{3}{4} + \frac{1}{4} = ?$ —Julian. Three-fourths plus one-eighth equal seven-eighths.
 Q. $\frac{3}{4} \div \frac{1}{4} = ?$ —Julian. Three-fourths contain one-fourth three times.
 Q. $\frac{3}{4} \div \frac{1}{4} = ?$ —Julian. Three-fourths contain one-half one and one-half times.
 Q. $1 \div \frac{1}{4} = ?$ —Julian. One contains three-fourths one and one-third times.
 Q. $\frac{3}{4} \div \frac{1}{4} = ?$ —Julian. Seven-eighths contain one-fourth three and one-half times.
 Q. $\frac{3}{4} \div \frac{1}{4} = ?$ —Julian. Five-eighths contain one-half one and one-fourth times.
 Q. $\frac{3}{4} \div \frac{1}{4} = ?$ —Julian. Six-eighths contain one-half one and one-half times.
 Q. How much will two pounds of rice cost at $\frac{1}{4}$ cent an ounce.—Claude. Eight cents.
 Q. How much will two pounds of rice cost at one-eighth cent an ounce?—Hunter. Four cents.
 Q. How much will one pound of rice cost at $\frac{1}{4}$ cents an ounce?—Frank. One pound will cost twenty cents.

Q. How much will one gallon of vinegar cost at $2\frac{1}{4}$ cents a pint?—Josie. One gallon will cost twenty cents.

Q. If a squirrel can climb $2\frac{1}{4}$ feet a second, how long will it take him to get to the top of a tree 25 feet high?—Jim. Ten seconds.

Teacher. Class stand. Face board. [Teacher writes 24625.] Louise, read.—Louise. Twenty-four thousand six hundred twenty-five.

(Teacher writes:) 24625

$\times 6$

Teacher. Class stand in line and recite in order.—Class. Six times five are thirty; write the naught and add the three to the next column. Six times two are twelve and three are fifteen; write the five and add the one to the next column. Six times six are thirty-six and one are thirty-seven; write the seven and add the three to the next column. Six times four are twenty-four and three are twenty seven; write the seven and add the two to the next column. Six times two are twelve and two are fourteen; write the fourteen. Result, 147,750. One hundred forty-seven thousand seven hundred fifty.

Q. 24625

$\times 5$

Five times five are twenty-five; write the five and add the two to the next column. Five times two are ten and two are twelve; write the two and add the one to the next column. Five times six are thirty and one are thirty-one; write the one and add the three to the next column. Five times four are twenty and three are twenty-three; write the three and add the two to the next column. Five times two are ten and two are twelve; write the twelve. Result, 123,125. One hundred twenty-three thousand one hundred twenty-five.

Q. 67428

$- 29264$

Four from eight leaves four; write the four. Six from twelve leaves six; write the six. Two from three leaves one; write the one. Nine from seventeen leaves eight; write the eight. Two from five leaves three; write the three. Remainder, 38,164. Thirty-eight thousand one hundred sixty-four.

Assistant superintendent. One problem in subtraction is sufficient to show the process.

Teacher. Class take seats.

Pupils read numbers as written: 29426

1804

3008

22422

6301

Teacher. Add.—Class. One, three, eleven, fifteen, twenty-one; write the one and add the two to the next column. Two, four, six; write the six. Three, seven, thirteen, seventeen; write the seven and add the one to the next column. Seven, nine, twelve, thirteen, twenty-two; write the two and add two to the next column. Four, six; write the six. The sum, 62,761. Sixty-two thousand seven hundred sixty-one.

HAMILTON SCHOOL—MISS CAUTHORNE, TEACHER.

[March 18, 1895—Class A, grade second, beginning—Children in school 15 months.]

Q. Class, find the sum of \$248.12 $\frac{1}{2}$, \$362.24, \$362.31, and \$523.37 $\frac{1}{2}$. (Answers were ready in one minute.)—Answer, \$1,496.05. (Nearly every pupil in the class had the answer.)

Q. What is the difference between \$4,152.30 and \$984.64? (Several pupils had answers ready in half minute. All appeared ready at the end of a minute.)—Earl. The difference between \$4,152.30 and \$984.64 is \$3,167.66.

Q. Multiply \$95.37 $\frac{1}{2}$ by 6.—Aimee. The product is \$572.26. (Pupils ready with answer in $\frac{1}{2}$ of a minute.)

Teacher. The children have multiplied fractions by whole numbers. They have found fractional parts of numbers. They add and divide fractions some.

Q. Multiply 5 by $\frac{1}{2}$.—Maude. 5 times $\frac{1}{2}$ are $2\frac{1}{2}$.

Q. 6 times $\frac{1}{2}$ = ?—Maude. 6 times $\frac{1}{2}$ are 3.

Q. 4 times $\frac{1}{2}$ = ?—Maude. 4 times $\frac{1}{2}$ are 2.

Q. 3 times $\frac{1}{2}$ = ?—Maude. 3 times $\frac{1}{2}$ are 1.

Q. 4 times $\frac{1}{4}$ = ?—Maude. 4 times $\frac{1}{4}$ are $1\frac{1}{4}$.

Q. 6 times $\frac{1}{3}$ = ?—Edna. 6 times $\frac{1}{3}$ are 2.

Q. 5 times $\frac{1}{3}$ = ?—Edna. 5 times $\frac{1}{3}$ are $1\frac{2}{3}$.

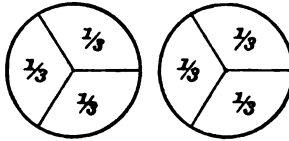
Q. 3 times $\frac{1}{3}$ = ?—Edna. 3 times $\frac{1}{3}$ are 1.

Q. 3 times $\frac{2}{3}$ = ?—Edna. 3 times $\frac{2}{3}$ are 2.

Q. 4 times $\frac{2}{3}$ = ?—Edna. 4 times $\frac{2}{3}$ are $2\frac{2}{3}$.

Q. 6 times $\frac{2}{3}$ = ?—Edna. 6 times $\frac{2}{3}$ are 4.

Q. Show by diagram how 3 times $\frac{2}{3}$ are 2 whole ones.—(Pupils made diagrams and pointed $\frac{2}{3}$ three times.)



Q. Who will multiply these?

$\frac{1}{2} \times 3$ = ?—Fred. 3 times $\frac{1}{2}$ are $\frac{3}{2}$.

$\frac{1}{2} \times 4$ = ? 4 times $\frac{1}{2}$ equals 1.

$\frac{1}{2} \times 5$ = ? 5 times $\frac{1}{2}$ equals $1\frac{1}{2}$.

$\frac{1}{2} \times 5$ = ? 5 times $\frac{1}{2}$ equals $2\frac{1}{2}$.

$\frac{1}{2} \times 6$ = ? 6 times $\frac{1}{2}$ equals $1\frac{1}{2}$.

$\frac{1}{2} \times 7$ = ? 7 times $\frac{1}{2}$ equals $1\frac{1}{2}$.

$\frac{1}{2} \times 8$ = ? 8 times $\frac{1}{2}$ equals 2.

Q. Who will multiply these?

$\frac{1}{3} \times 3$ = ?—Helen. 3 times $\frac{1}{3}$ equals 1.

$\frac{1}{3} \times 4$ = ? 4 times $\frac{1}{3}$ equals $\frac{4}{3}$.

$\frac{2}{3} \times 3$ = ? 3 times $\frac{2}{3}$ equals 1.

$\frac{2}{3} \times 3$ = ? 3 times $\frac{2}{3}$ equals $1\frac{1}{3}$.

$\frac{2}{3} \times 3$ = ? 3 times $\frac{2}{3}$ equals $2\frac{1}{3}$.

$\frac{2}{3} \times 2$ = ? 2 times $\frac{2}{3}$ equals $\frac{4}{3}$.

Q. Who will compare 12 with other multiples of 6?—Alice. 12 is 2 times 6; 12 is once itself; 12 is $\frac{1}{2}$ of 18; 12 is $\frac{1}{3}$ of 24; 12 is $\frac{1}{4}$ of 36; 12 is $\frac{1}{5}$ of 42; 12 is $\frac{1}{6}$ of 48; 12 is $\frac{1}{7}$ of 54.

Q. Compare 18 with other multiples of 6.—Ralph. 18 is 3 times 6; 18 is $\frac{1}{2}$ of 12; 18 is once itself; 18 is $\frac{1}{3}$ of 24; 18 is $\frac{1}{4}$ of 30; 18 is $\frac{1}{5}$ of 36; 18 is $\frac{1}{6}$ of 42; 18 is $\frac{1}{7}$ of 48; 18 is $\frac{1}{8}$ of 54.

Q. Compare 36 as you did the other numbers.—Erskine. 36 is 6 sixes; 36 is 3 twelves; 36 is 2 eights; 36 is $\frac{1}{2}$ of 24; 36 is $\frac{1}{3}$ of 30; 36 is once itself; 36 is $\frac{1}{4}$ of 42; 36 is $\frac{1}{5}$ of 48; 36 is $\frac{1}{6}$ of 54.

Q. Give the division of sixes.—Frank. 1 is $\frac{1}{6}$ of 6; 3 is $\frac{1}{2}$ of 6; 2 is $\frac{1}{3}$ of 6; 4 is $\frac{2}{3}$ of 6; 7 is $1\frac{1}{3}$; 9 is $1\frac{1}{2}$; or $1\frac{1}{2}$; 8 is $1\frac{2}{3}$; or $1\frac{1}{3}$; 12 is 2 sixes; 14 is $2\frac{1}{3}$ sixes; 16 is $2\frac{2}{3}$ sixes; 18 is 3 sixes; 21 is $3\frac{1}{2}$ sixes; 22 is $3\frac{1}{3}$ sixes; 24 is 4 sixes; 25 is $4\frac{1}{5}$ sixes; 27 is $4\frac{1}{2}$ sixes; 39 is $6\frac{1}{2}$ sixes; 32 is $5\frac{1}{3}$ sixes.

Q. How many of you have bought milk?—(Nearly all had.)

Q. How much do you pay for a gallon of milk?—A. 20 cents a gallon.

Q. Now, if milk costs 20 cents a gallon, what will 3 quarts cost?—Class. Three quarts will cost 15 cents.

Q. I want someone to tell me how he knows that the milk will cost 15 cents.—Alice. If the milk costs 20 cents a gallon, a quart is $\frac{1}{4}$ of a gallon, and $\frac{1}{4}$ of 20 cents is 5 cents, and three quarts will cost 3 times 5 cents, or 15 cents.

Q. If a gallon of coal oil costs 10 cents, what will two quarts cost?—Maude. Two quarts will cost 5 cents.

Q. How do you know that it will cost 5 cents?—Bert. If a gallon costs 10 cents, $\frac{1}{2}$ gallon will cost 5 cents.

Q. What will 18 eggs cost, at 20 cents a dozen?—David. 18 eggs will cost 30 cents.

Q. How do you know they will cost 30 cents?—David. 20 cents a dozen. 6 is $\frac{1}{2}$ a dozen, and 18 eggs equal a dozen and six more.

Q. How many square inches in a square foot?—Class. 144.

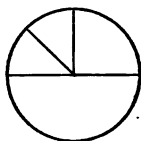
Q. How long a string would it take to reach around a foot square?—Class. 48 inches.

Q. How many square feet in a square yard?—Class. 9 square feet in a square yard.

Q. How many square feet in $\frac{1}{4}$ square yard?—Class. $4\frac{1}{4}$ square feet.

Q. In a flower bed 4 feet long and 5 feet wide, how many square feet?—Earl. 20 square feet.

Q. How many square yards would that be?—Earl. 2 $\frac{2}{3}$ square yards.



(Pupils explain division by diagram if called upon to do so.)

Q. $\frac{1}{2} \div \frac{1}{2} = ?$ —John. $\frac{1}{2}$ is contained in $\frac{1}{2}$ one-half time.

Q. $\frac{3}{4} \div \frac{1}{2} = ?$ —John. $\frac{1}{2}$ is contained in $\frac{3}{4}$ one and one-fourth times.

Q. $\frac{1}{2} \div \frac{2}{3} = ?$ —John. $\frac{2}{3}$ is contained in $\frac{1}{2}$ two-thirds time.

Q. $\frac{3}{4} \div \frac{1}{6} = ?$ —John. $\frac{1}{6}$ is contained in $\frac{3}{4}$ one-sixth time.

Q. $\frac{5}{8} \div \frac{1}{3} = ?$ —John. $\frac{1}{3}$ is contained in $\frac{5}{8}$ two and one-third times.

Q. $\frac{1}{2} \div \frac{2}{3} = ?$ —John. $\frac{2}{3}$ is contained in $\frac{1}{2}$ one-third time.

Q. $\frac{3}{4} \div \frac{2}{3} = ?$ —John. $\frac{2}{3}$ is contained in $\frac{3}{4}$ one-half time.

Q. Some child tell me the fractional parts of a foot.—Aimee. 1 inch is $\frac{1}{12}$ of a foot; 2 inches are $\frac{2}{12}$ equals $\frac{1}{6}$ of a foot; 3 inches are $\frac{3}{12}$, equals $\frac{1}{4}$ of a foot; 4 inches are $\frac{4}{12}$, equals $\frac{1}{3}$ of a foot; 5 inches are $\frac{5}{12}$ of a foot; 6 inches are $\frac{6}{12}$, equals $\frac{1}{2}$ of a foot; 7 inches are $\frac{7}{12}$ of a foot; 8 inches are $\frac{8}{12}$, equals $\frac{2}{3}$ of a foot; 9 inches are $\frac{9}{12}$, equals $\frac{3}{4}$ of a foot; 10 inches are $\frac{10}{12}$, equals $\frac{5}{6}$ of a foot; 11 inches are $\frac{11}{12}$ of a foot; 12 inches are 1 foot.

Q. Class may add $\frac{1}{2}$ of a foot and $\frac{1}{4}$ of a foot.—Class. $\frac{1}{2}$ foot is $\frac{2}{4}$ foot, $\frac{1}{4}$ foot is $\frac{1}{4}$ foot, and $\frac{2}{4}$ and $\frac{1}{4}$ are $\frac{3}{4}$ foot.

Q. $\frac{2}{3}$ of a foot and $\frac{1}{6}$ of a foot are how much?—Class. $\frac{2}{3}$ of a foot are $\frac{4}{6}$, and $\frac{1}{6}$ of a foot is $\frac{1}{6}$, and $\frac{4}{6}$ and $\frac{1}{6}$ are $\frac{5}{6}$ of a foot.

Q. $\frac{3}{4}$ of a foot and $\frac{1}{4}$ of a foot are how much?—Class. $\frac{3}{4}$ of a foot are $\frac{3}{4}$, and $\frac{1}{4}$ of a foot is $\frac{1}{4}$, and $\frac{3}{4}$ and $\frac{1}{4}$ are 1 $\frac{1}{4}$.

Q. $\frac{1}{2}$ of a foot and $\frac{1}{3}$ of a foot are how much?—Class. $\frac{1}{2}$ of a foot is $\frac{2}{3}$, and $\frac{1}{3}$ of a foot is $\frac{1}{3}$, and $\frac{2}{3}$ and $\frac{1}{3}$ are $\frac{3}{3}$, equals 1 of a foot.

Q. Add $\frac{1}{3}$ of a foot and $\frac{1}{3}$ of a foot.—John. $\frac{1}{3}$ of a foot are $\frac{1}{3}$, and $\frac{1}{3}$ of a foot are $\frac{1}{3}$, and $\frac{1}{3}$ and $\frac{1}{3}$ equal $\frac{2}{3}$ foot.

Q. Give the fractional parts of numbers.—Class. $\frac{1}{2}$ of 15 = 10; $\frac{1}{3}$ of 21 = 14; $\frac{1}{4}$ of 12 = 8; $\frac{1}{5}$ of 27 = 18; $\frac{1}{6}$ of 32 = 24; $\frac{1}{7}$ of 12 = 9; $\frac{1}{8}$ of 16 = 12; $\frac{1}{9}$ of 20 = 15; $\frac{1}{10}$ of 36 = 27; $\frac{1}{11}$ of 25 = 10; $\frac{1}{12}$ of 25 = 15; $\frac{1}{13}$ of 30 = 12.

[Table of sixes.]

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Q. Give the number of sixes in each column.—Elenore. 2 sixes are 12; 3 sixes are 18; 4 sixes are 24; 5 sixes are 30; 6 sixes are 36; 7 sixes are 42; 8 sixes are 48; 9 sixes are 54.

(After the pupil had recited the table, the teacher put the products under the columns.)

ADAMS SCHOOL—MISS CARR, TEACHER.

[April 9, 1895—Class B, grade second.]

Assistant Superintendent. Miss Carr, when I was at your school the other day I saw a great interest in the lesson in which you were developing the idea of the number 23 with your lower class. Will you take the same class to-day and develop another number for us, that we may get a record of all of the steps of the lesson?

Miss Carr. I will do so at once. (The class is called.)

Q. What number are we to study to-day, children?—Class. Twenty-six.

Miss Carr. We will begin, then, by grouping the numbers below 26, and including it, according to their endings. (In answer to the teacher's question as to the endings of the numbers below 26 the following groups are obtained:)

26. $1 \left\{ \begin{array}{l} 1 \\ 11 \\ 21 \end{array} \right.$ $2 \left\{ \begin{array}{l} 2 \\ 12 \\ 22 \end{array} \right.$ $3 \left\{ \begin{array}{l} 3 \\ 13 \\ 23 \end{array} \right.$ $4 \left\{ \begin{array}{l} 4 \\ 14 \\ 24 \end{array} \right.$ $5 \left\{ \begin{array}{l} 5 \\ 15 \\ 25 \end{array} \right.$ $6 \left\{ \begin{array}{l} 6 \\ 16 \\ 26 \end{array} \right.$ $7 \left\{ \begin{array}{l} 7 \\ 17 \end{array} \right.$ $8 \left\{ \begin{array}{l} 8 \\ 18 \end{array} \right.$ $9 \left\{ \begin{array}{l} 9 \\ 19 \end{array} \right.$ $0 \left\{ \begin{array}{l} 0 \\ 10 \\ 20 \end{array} \right.$

Q. You may give me all the numbers below 26 that end with one.—Eva. One, eleven, twenty-one.

Q. All that end with two.—Mary. Two, twelve, twenty-two.

Q. All those that end with three.—Olive. Three, thirteen, twenty-three.

Q. Those that end with four.—Dave. Four, fourteen, twenty-four.

Q. Those that end with five.—Mary. Five, fifteen, twenty-five.

Q. Those that end with six.—Tommy. Six, sixteen, twenty-six.

Q. Those that end with seven.—Forrest. Seven, seventeen.

Q. Those that end with eight.—Minnie. Eight, eighteen.

Q. Those that end with nine.—Walter. Nine, nineteen.

Q. Those that end with naught.—Andrew. Naught, ten, twenty.

Q. Now, children, you may tell me again what number we are ready to make.

Q. With what number does it end?—Class. With the number six.

Q. Let us look at the numbers in our first group. Do they all end with the same number?—Class.

Yes'm.

Q. What is it?—Ernest. The number one.

Q. One and what make six?—Linnie. One and five make six.

Q. Then the numbers that we add to the first group must all end with what number?—Dora. They must all end with five.

Q. You may arrange this first group for us.—John. One and twenty-five make twenty-six; eleven and fifteen make twenty-six; twenty-one and five make twenty-six.

(As the questions are answered giving the numbers that added together make twenty-six, the teacher fills out the groups until this form is obtained:)

$$26. \left\{ \begin{array}{lllll} 1 \left\{ \begin{array}{l} 1+25 \\ 11+15 \\ 21+5 \end{array} \right. & 2 \left\{ \begin{array}{l} 2+24 \\ 12+14 \\ 22+4 \end{array} \right. & 3 \left\{ \begin{array}{l} 3+23 \\ 13+13 \\ 23+3 \end{array} \right. & 4 \left\{ \begin{array}{l} 4+22 \\ 14+12 \\ 24+2 \end{array} \right. & 5 \left\{ \begin{array}{l} 5+21 \\ 15+11 \\ 25+1 \end{array} \right. \\ 6 \left\{ \begin{array}{l} 6+20 \\ 16+10 \\ 26+0 \end{array} \right. & 7 \left\{ \begin{array}{l} 7+19 \\ 17+9 \end{array} \right. & 8 \left\{ \begin{array}{l} 8+18 \\ 18+8 \end{array} \right. & 9 \left\{ \begin{array}{l} 9+17 \\ 19+7 \end{array} \right. & 10 \left\{ \begin{array}{l} 0+26 \\ 10+16 \\ 20+6 \end{array} \right. \end{array} \right.$$

Q. With what does the second group end?—Olive. The second group ends with two.

Q. Two and what make six?—Blanche. Two and four make six.

Q. Arrange the group.—Blanche. Two and twenty-four make twenty-six; twelve and fourteen make twenty-six; twenty-two and four make twenty-six.

Q. With what does the third group end?—Minnie. The third group ends with three.

Q. Three and what make six?—Dave. Three and three make six.

Q. Arrange the third group.—Eva. Three and twenty-three make twenty-six; thirteen and thirteen make twenty-six; twenty-three and three make twenty-six.

Q. Do you see any combinations in this group that are alike?—Eva. The first and third are alike. (Teacher crosses out the underlined.)

Q. With what does the fourth group end?—Mabel. The fourth group ends with four.

Q. Four and what make six?—Mabel. Four and two make six.

Q. Arrange this group.—Olive. Four and twenty-two make twenty-six; fourteen and twelve make twenty-six; twenty-four and two make twenty-six.

Q. With what does the next group end?—Bessie. The next group ends with five.

Q. Five and what make six?—Bessie. Five and one make six.

Q. Arrange that group.—Ernest. Five and twenty-one make twenty-six; fifteen and eleven make twenty-six; twenty-five and one make twenty-six.

Q. Six and what make six?—Anna. Six and naught make six.

Q. Arrange that group.—Anna. Six and twenty make twenty-six; sixteen and ten make twenty-six; twenty-six and naught make twenty-six.

Q. Seven and what make six?—Dora. Seven is more than six.

Q. Now, we will think we are making what number, then, instead of six?—Class. Sixteen.

Q. Seven and what make sixteen?—Walter. Seven and nine make sixteen.

Q. Arrange the group of sevens.—Forrest. Seven and nineteen make twenty-six; seventeen and nine make twenty-six.

Q. Eight and what make sixteen?—Walter. Eight and eight make sixteen.

Q. Arrange this group.—Dave. Eight and eighteen make twenty-six; eighteen and eight make twenty-six.

Q. Are these combinations the same?—Class. Yes.

Q. Then we will cross one out. Nine and what make sixteen?—Minnie. Nine and seven make sixteen.

Q. Arrange the group.—Minnie. Nine and seventeen are twenty-six; nineteen and seven are twenty-six.

Q. With what does the last group end?—Ida. Naught.

Q. Naught and what make six?—Ida. Naught and six make six.

Q. Arrange the last group.—Ida. Naught and twenty-six make twenty-six; ten and sixteen make twenty-six; twenty-six and naught make twenty-six.

Q. Now, compare the groups and see if you find any that are alike.—Dora. The first and fifth are alike.

Q. Then we will cross the fifth one out. Are there any others?—Arthur. The fourth is like the second.

Q. Then we will cross the fourth one out. Are any others alike?

Forrest. The ninth and seventh are alike.

(Teacher crosses ninth out.)

Ernest. The tenth and sixth are alike.

Teacher. We will cross the tenth out also.

Teacher. Subtraction is learned at the same time in a similar manner from the same groupings. Thus, the first group is read: Twenty-six less one equals twenty-five; twenty-six less eleven equals fifteen; twenty-six less twenty-one equals five; Twenty-six less twenty-five equals one; twenty-six less fifteen equals eleven; twenty-six less five equals twenty-one. All the groupings are read in the same way, and the drill follows. By calling attention to the endings of numbers, I find this classification of combinations an aid toward rapid addition and subtraction. I supplement this work by concrete problems involving these processes and numbers, as: There are sixteen children in one class and ten in another; how many in both classes? There were twenty-six children in the schoolroom; sixteen were studying, and the rest were reciting; how many were reciting?

(Teacher erases the groups.)

Teacher. The children are then given the drill; first, by grouping the numbers according to the endings; after which the combinations are given at random, thus: I will put a number on the board, and you give me the other number that with it will make twenty-six.

Q. 4.—Mabel. Twenty-two.

Q. 10.—Beessie. Sixteen.

Q. 21.—Minnie. Five.

Q. 8.—Dora. Eighteen.

Q. 12.—Anna. Fourteen.

Teacher. I proceed in this manner until all the numbers less than twenty-six are in a column on the board. The drill is then strengthened by requiring each of several children to read the whole column as a paragraph. Division and multiplication are developed as follows:

Q. What number are we studying?—Allie. The number twenty-six.

Q. What is the first number below twenty-six?—Tony. Twenty-five is the first number below twenty-six.

Q. We all know about twenty-five, don't we?—Class. Yes'm.

Q. Twenty-five and what make twenty-six?—Class. One.

Q. Then, there are how many twenty-fives in twenty-six?—George. One and one twenty-fifth twenty-fives in twenty-six.

Q. What are the factors of this twenty-five?—Oscar. Five times five.

Q. What would be a good number to take next, then?—Dora. The number five.

Q. Count twenty-six by fives.—Dora. Five, ten, fifteen, twenty, twenty-five, one. There are five and one-fifth fives in twenty-six.

(For the form of this lesson, see Table No. 3.)

Q. Twenty-four and what make twenty-six?—Forrest. Twenty-four and two make twenty-six.

Q. Now, how many twenty-fours in twenty-six?—Forrest. There are one and one-twelfth twenty-fours in twenty-six.

Q. Think of the factors of twenty-four, and tell me a good number to take next.—Ernest. Twelve.

Q. Count twenty-six by twelves.—Ernest. Twelve, twenty-four, and two make twenty-six.

Q. How many twelves in twenty-six?—Anna. There are two and one-sixth twelves in twenty-six.

Q. How do you know?—Anna. I see two whole twelves, and a two, which is one-sixth of another twelve.

Q. What is another factor of twenty-four?—Mabel. Six.

Q. Count twenty-six by sixes.—Olive. Six, twelve, eighteen, twenty-four, and two make twenty-six. There are four and one-third sixes in twenty-six.

Q. Name some other factors of twenty-four.—John. Eight times three.

Q. Count twenty-six by threes.—George. Three, six, nine, twelve, fifteen, eighteen, twenty-one, twenty-four, and two make twenty-six. There are eight and two-thirds threes in twenty-six.

Q. Name another factor of twenty-four.—John. Three times eight.

Q. Count twenty-six by eights.—John. Eight, sixteen, twenty-four, and two make twenty-six. There are three and one-fourth eights in twenty-six.

Q. What other number can we get from twenty-four?—Tony. Four.

Q. Count twenty-six by fours.—Tony. Four, eight, twelve, sixteen, twenty, twenty-four, and two make twenty-six.

Q. How many fours in twenty-six?—Dave. There are six and one-half fours in twenty-six.

Q. What is one-fourth of twenty-six?—Edna. Six and one-half is one-fourth of twenty-six.

Q. What, then, are three-fourths of twenty-six?—Edna. Three-fourths of twenty-six are nineteen and one-half.

Q. What else can we get out of twenty-four?—Class. Two.

Q. How many twos in each one of these fours?—Class. Two twos.

Q. Class may count twenty-six by twos.—Class. Two, four, six, eight, ten, twelve, fourteen, sixteen, eighteen, twenty, twenty-two, twenty-four, twenty-six.

Q. How many twos in twenty-six?—Bessie. There are thirteen twos in twenty-six.

Q. If there are thirteen twos in twenty-six, how many thirteens in twenty-six?—Maud. There are two thirteens in twenty-six.

Q. Two is what part of twenty-six.—Ernst. Two is one-thirteenth of twenty-six.

Q. Twenty-three and what make twenty-six?—Dave. Twenty-three and three make twenty-six.

Q. How many twenty-threes in twenty-six?—Blanche. There are one and three twenty-thirdst twenty-threes in twenty-six.

Q. Has twenty-three any factors?—Class. No'm.

Q. Twenty-two and what make twenty-six?—Eva. Twenty-two and four make twenty-six.

Q. How many twenty-twos in twenty-six?—Olive. In twenty-six there are one and two-elevenths twenty-twos.

Q. Prove that that is so.—Ida. I see a whole twenty-two and a four. Two is one-eleventh of twenty-two, so four would be two-elevenths of another twenty-two.

Q. What number shall we take next?—Blanche. Eleven.

Q. Count twenty-six by eleven.—Andrew. Eleven, twenty-two, and four make twenty-six.

Q. How many elevens in twenty-six?—Walter. There are two and four-elevenths elevens in twenty-six.

Teacher. Placing upon the board these answers as they are given, we proceed in this manner until we have measured twenty-six by all the numbers under it, thus forming Table No. 3. This work is also followed by the drill, the table being erased from the board, and the numbers in irregular order being placed in a column on the board, from which each of several children read the division paragraph.

Addition and division are not only read from this table in the manner indicated and fractions reduced, but multiplication may also be developed, reading thus: One time twenty-five and one make twenty-six, or twenty-five times one and one twenty-fifth make twenty-six. Five times five and one make twenty-six, or five times five and a fifth make twenty-six, and so on.

This table is also supplemented by the concrete work, as: If I spend twenty-six cents for tops, at five cents each, how many could I buy? Divide two and one-sixth dozen cookies among thirteen children, how many would each child get? Each share would be what part of the cookies? If James gave his share to John, how many would John have? What part of all the cookies would John have? At two cents each, how much would thirteen marbles cost? Twenty-six quarts of milk would make how many gallons, etc.? With this work for a foundation, the text-book problems can be readily solved.

Table No. 3.

25 + 1 = 26
5 + 5 + 5 + 5 + 5 + 1 = 26
24 + 2 = 26
12 + 12 + 2 = 26
6 + 6 + 6 + 6 + 2 = 26
3 + 3 + 3 + 3 + 3 + 3 + 3 + 2 = 26
8 + 8 + 8 + 2 = 26
4 + 4 + 4 + 4 + 4 + 4 + 2 = 26
2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = 26
● 13 + 13 = 26
23 + 3 = 26
22 + 4 = 26
11 + 11 + 4 = 26
21 + 5 = 26
7 + 7 + 7 + 5 = 26
20 + 6 = 26
10 + 10 + 6 = 26
19 + 7 = 26
18 + 8 = 26
9 + 9 + 8 = 26
17 + 9 = 26
16 + 10 = 26
15 + 11 = 26
14 + 12 = 26

HUMBOLDT SCHOOL—MISS SMITH, TEACHER.

[March 26, 1893—Class A, grade third.]

Q. Tell how many pounds in these numbers of ounces.—Frank S.:

75 ounces	} -- pounds	In 75 ounces there are $4\frac{1}{4}$ pounds.
72 ounces		In 72 ounces there are $4\frac{1}{2}$ pounds.
74 ounces		In 74 ounces there are $4\frac{1}{2}$ pounds.
78 ounces		In 78 ounces there are $4\frac{1}{2}$ pounds.
76 ounces		In 76 ounces there are $4\frac{1}{2}$ pounds.
79 ounces		In 79 ounces there are $4\frac{1}{2}$ pounds.

Q. How many feet—

In 75 inches?	Bert.	In 75 inches there are $6\frac{1}{4}$ feet.
In 72 inches?		In 72 inches there are 6 feet.
In 74 inches?		In 74 inches there are $6\frac{1}{4}$ feet.
In 78 inches?		In 78 inches there are $6\frac{1}{2}$ feet.
In 76 inches?		In 76 inches there are $6\frac{1}{2}$ feet.
In 79 inches?		In 79 inches there are $6\frac{1}{4}$ feet.

Q. Beginning with forty, going backward, give the number of gallons in 40 pints, 39 pints, 38 pints, etc.—Harry. In 40 pints there are 5 gallons. In 39 pints there are $4\frac{1}{2}$ gallons. In 38 pints there are $4\frac{1}{2}$ gallons. In 37 pints there are $4\frac{1}{2}$ gallons. In 36 pints there are $4\frac{1}{2}$ gallons. In 35 pints there are $4\frac{1}{2}$ gallons. In 34 pints there are $4\frac{1}{2}$ gallons. In 33 pints there are $4\frac{1}{2}$ gallons. In 32 pints there are 4 gallons. In 31 pints there are $3\frac{1}{2}$ gallons. In 30 pints there are $3\frac{1}{2}$ gallons. In 29 pints there are $3\frac{1}{2}$ gallons. In 28 pints there are $3\frac{1}{2}$ gallons. In 27 pints there are $3\frac{1}{2}$ gallons. In 26 pints there are $3\frac{1}{2}$ gallons. In 25 pints there are $3\frac{1}{2}$ gallons. In 24 pints there are 3 gallons. In 23 pints there are $2\frac{1}{2}$ gallons. In 22 pints there are $2\frac{1}{2}$ gallons. In 21 pints there are $2\frac{1}{2}$ gallons. In 20 pints there are $2\frac{1}{2}$ gallons. In 19 pints there are $2\frac{1}{2}$ gallons. In 18 pints there are $2\frac{1}{2}$ gallons. In 17 pints there are $2\frac{1}{2}$ gallons. In 16 pints there are 2 gallons. In 15 pints there are $1\frac{1}{2}$ gallons. In 14 pints there are $1\frac{1}{2}$ gallons. In 13 pints there are $1\frac{1}{2}$ gallons. In 12 pints there are $1\frac{1}{2}$ gallons. In 11 pints there are $1\frac{1}{2}$ gallons. In 10 pints there are $1\frac{1}{2}$ gallons. In 9 pints there are $1\frac{1}{2}$ gallons. In 8 pints there is 1 gallon. In 7 pints there is $\frac{1}{2}$ gallon. In 6 pints there is $\frac{1}{2}$ gallon. In 5 pints there is $\frac{1}{2}$ gallon. In 4 pints there is $\frac{1}{2}$ gallon. In 3 pints there is $\frac{1}{2}$ gallon. In 2 pints there is $\frac{1}{2}$ gallon. In 1 pint there is $\frac{1}{2}$ gallon.

Q. How many yards—

In 75 feet?	Edwin.	In 75 feet there are 25 yards.
In 72 feet?		In 72 feet there are 24 yards.
In 74 feet?		In 74 feet there are $24\frac{1}{2}$ yards.
In 78 feet?		In 78 feet there are 26 yards.
In 76 feet?		In 76 feet there are $25\frac{1}{2}$ yards.
In 79 feet?		In 79 feet there are $26\frac{1}{2}$ yards.

Q. What is one-fourth of 72?—Arthur. One-fourth of 72 is 19.

Q. What are three-fourths of 76?—George. Three-fourths of 76 are 57.

Q. What is one-eighth of 72?—Ella. One eighth of 72 is 9.

Q. What are seven-eighths of 72?—Robert. Seven-eighths of 72 are 63.

Q. What is one-third of 75?—Maud. One-third of 75 is 25.

Q. What are two-thirds of 75?—Cleo. Two-thirds of 75 are 50.

Q. What is one-ninth of 72?—Eddie. One-ninth of 72 is 8.

Q. What are four-ninths of 72?—Katie. Four-ninths of 72 are 32.

Q. What are seven-ninths of 72?—Harold. Seven-ninths of 72 are 56.

Q. What is one-sixteenth of 64?—Arthur. One-sixteenth of 64 is 4.

Q. What are five-sixteenths of 64?—Ada. Five-sixteenths of 64 are 20.

Q. What is one-fifth of 75?—Will. One-fifth of 75 is 15.

Q. What are four-fifths of 75?—Herbert. Four-fifths of 75 are 60.

Q. What is one-half of 74?—Mattie. One-half of 74 is 37.

Q. What is one-eighth of 75?—Lida. One-eighth of 75 is $9\frac{1}{8}$.Q. How do you know that one-eighth of 75 is $9\frac{1}{8}$?—Katherine. In 75 there are $9\frac{1}{8}$ eighths; therefore $\frac{1}{8}$ of 75 is $9\frac{1}{8}$.

Q. What is the sum of three-fourths and three-eighths?—Ada. Three-fourths of a gallon are six pints; three-eighths of a gallon are three pints; one pint is one-eighth of a gallon; six pints are six-eighths of a gallon; three pints are three-eighths of a gallon; six-eighths of a gallon and three-eighths of a gallon are nine-eighths gallons, or one and one-eighth gallons. Therefore the sum of three-fourths and three-eighths is one and one-eighth.

Q. Three-eighths taken from three-fourths leave what?—Willie B. Three-fourths of a gallon are six pints; three-eighths of a gallon are three pints; one pint is one-eighth of a gallon; six pints are six-eighths of a gallon; three pints are three-eighths of a gallon; three-eighths of a gallon taken from six-eighths of a gallon leave three-eighths of a gallon. Therefore three-eighths taken from three-fourths leave three-eighths.

Q. How many three-eighths in three-fourths?—Maud. Three-fourths of a gallon are six pints; three-eighths of a gallon are three pints; one pint is one-eighth of a gallon; six pints are six-eighths

of a gallon; three pints are three-eighths of a gallon; in six-eighths of a gallon there are two three-eighths of a gallon. Therefore there are two three-eighths in three-fourths.

Q. What is one-half of three-fourths?—Frank R. Three-fourths of a gallon are six pints; one pint is one-eighth of a gallon; six pints are six-eighths of a gallon; one half of six-eighths of a gallon is three-eighths of a gallon. Therefore one-half of three-fourths is three-eighths.

Q. One-half and three-sixteenths are what?—Robert. One-half of a pound is eight ounces; three-sixteenths of a pound are three ounces; one ounce is one-sixteenth of a pound; eight ounces are eight-sixteenths of a pound; three ounces are three-sixteenths of a pound; eight-sixteenths of a pound and three-sixteenths of a pound are eleven-sixteenths of a pound. Therefore one-half and three-sixteenths are eleven-sixteenths.

Q. Three sixteenths taken from one-half leaves what?—George C. One-half of a pound is eight ounces; three-sixteenths of a pound are three ounces; one ounce is one-sixteenth of a pound; eight ounces are eight-sixteenths of a pound; three ounces are three-sixteenths of a pound; three-sixteenths of a pound taken from eight-sixteenths of a pound are five-sixteenths of a pound. Therefore three-sixteenths taken from one-half leave five-sixteenths.

Q. How many three-sixteenths in one-half?—Cleo. One-half of a pound is eight ounces; three-sixteenths of a pound are three ounces; one ounce is one-sixteenth of a pound; eight ounces are eight-sixteenths of a pound; three ounces are three-sixteenths of a pound; in eight-sixteenths of a pound there are two and two-thirds three-sixteenths of a pound. Therefore there are two and two-thirds three-sixteenths in one-half.

Q. Four-fifths and one-half are what?—Svend. Four-fifths of a dime are eight cents; one-half of a dime is five cents; one cent is one-tenth of a dime; eight cents are eight-tenths of a dime; five cents are five-tenths of a dime; eight-tenths of a dime and five-tenths of a dime are thirteen-tenths of a dime, or one and three-tenths of a dime. Therefore four-fifths and one-half are one and three-tenths.

Q. One-half taken from four-fifths is what?—Frank S. Four-fifths of a dime are eight cents; one-half of a dime is five cents; one cent is one-tenth of a dime; eight cents are eight-tenths of a dime; five cents are five-tenths of a dime; five-tenths of a dime taken from eight-tenths of a dime leave three-tenths of a dime. Therefore one-half taken from four-fifths is three-tenths.

Q. One-fifth of one-half is what?—Neal. One-half of a dime is five cents; one cent is one-tenth of a dime; five cents are five-tenths of a dime; one-fifth of five-tenths of a dime is one-tenth of a dime. Therefore one-fifth of one-half is one-tenth.

Q. Two-thirds and one-fourth are what?—Katherine. Two-thirds of a foot are eight inches; one-fourth of a foot is three inches; one inch is one-twelfth of a foot; eight inches are eight-twelfths of a foot; three inches are three-twelfths of a foot; eight-twelfths of a foot and three-twelfths of a foot are eleven-twelfths of a foot. Therefore two-thirds and one-fourth are eleven-twelfths.

Q. One-fourth taken from two-thirds is what?—Bert. Two-thirds of a foot are eight inches; one-fourth of a foot is three inches; one inch is one-twelfth of a foot; eight inches are eight-twelfths of a foot; three inches are three-twelfths of a foot; three-twelfths of a foot taken from eight-twelfths of a foot leave five-twelfths of a foot. Therefore one-fourth taken from two-thirds leave five-twelfths.

Q. How many one-fourths in two-thirds?—Ruth. Two-thirds of a foot are eight inches; one-fourth of a foot is three inches; one inch is one-twelfth of a foot; eight inches are eight-twelfths of a foot; three inches are three-twelfths of a foot; in eight-twelfths of a foot there are two and two-thirds three-twelfths of a foot. Therefore there are two and two-thirds one-fourths in two-thirds.

Q. One-third of one-fourth is what?—Lida. One-fourth of a foot is three inches; one inch is one-twelfth of a foot; three inches are three-twelfths of a foot; one-third of three-twelfths of a foot is one-twelfth of a foot. Therefore one-third of one-fourth is one-twelfth.

Q. Two-thirds and four-ninths are what?—Harry. Two-thirds of a square yard are six square feet; four-ninths of a square yard are four square feet; one square foot is one-ninth of a square yard; six square feet are six-ninths of a square yard; four square feet are four-ninths of a square yard; four-ninths of a square yard and six-ninths of a square yard are ten-ninths of a square yard, or one and one-ninth square yards. Therefore two-thirds and four-ninths are one and one-ninth.

Q. Four-ninths taken from two-thirds leave what?—Harold. Two thirds of a square yard are six square feet; four-ninths of a square yard are four square feet; one square foot is one-ninth of a square yard; six square feet are six-ninths of a square yard; four square feet are four-ninths of a square yard; four-ninths of a square yard taken from six-ninths of a square yard leave two-ninths of a square yard. Therefore four-ninths taken from two-thirds leave two-ninths.

Chart.

	1	2	3	4	5	6	
(1)	10	15	20	25	30	40	(2)
	10	15	20	25	30	40	50
	10	15	20	25	30	40	60
	10	15	20	25	30	40	70
	10	15	20	25	30	40	80
	10	15	20	25	30	40	90
	10	15	20	25	30	40	100

Q. What part is each of the numbers on the first line of each other number?

Frank S. One is one-half of two; one is one-third of three; one is one-fourth of four; one is one-fifth of five; one is one-sixth of six.

Will. Two is two-thirds of three; two is one-half of four; two is two-fifths of five; two is one-third of six.

Neal. Three is three-fourths of four; three is three-fifths of five; three is one-half of six.

Frank R. Four is four-fifths of five; four is two-thirds of six.

Ella. Five is five-sixths of six.

Edwin. 1 is 50 per cent of 2; 1 is $33\frac{1}{3}$ per cent of 3; 1 is 25 per cent of 4; 1 is 20 per cent of 5; 1 is 16 $\frac{2}{3}$ per cent of 6.

George C. 2 is 66 $\frac{2}{3}$ per cent of 3; 2 is 50 per cent of 4; 2 is 40 per cent of 5; 2 is 33 $\frac{1}{3}$ per cent of 6.

Amy. 3 is 75 per cent of 4; 3 is 60 per cent of 5; 3 is 50 per cent of 6.

Lida. 4 is 80 per cent of 5; 4 is 66 $\frac{2}{3}$ per cent of 6; 5 is 83 $\frac{1}{3}$ per cent of 6.

Willie B. (referring to Table No. 1). 5 is 50 per cent of 10; 5 is 33 $\frac{1}{3}$ per cent of 15; 5 is 25 per cent of 20; 5 is 10 per cent of 50; 5 is 16 $\frac{2}{3}$ per cent of 30.

Q. Show that 5 is 16 $\frac{2}{3}$ per cent of 30.

George C. Five is one-sixth of thirty; thirty is 100 per cent of itself; one-sixth of 100 per cent is 16 $\frac{2}{3}$ per cent.

Willie B. 5 is 12 $\frac{1}{2}$ per cent of 40; 5 is 20 per cent of 100.

Robert (referring to Table No. 2). 10 is 20 per cent of 50; 10 is 33 $\frac{1}{3}$ per cent of 30; 10 is 12 $\frac{1}{2}$ per cent of 80; 10 is 25 per cent of 40; 10 is 50 per cent of 20.

By Assistant Superintendent. How do you know that?

Robert. I know that 10 is one-half of 20; 20 is 100 per cent of itself, and one-half of 100 per cent is 50 per cent.

Chart.

(3)	$\begin{array}{l} 16 \\ 64 \\ 12 \\ 48 \\ 24 \\ 32 \\ 40 \end{array}$	(4)	$\begin{array}{l} 1\frac{1}{2} \\ \frac{3}{4} \\ 1 \\ 2\frac{1}{2} \\ 3 \\ 2 \\ 4 \\ \frac{1}{2} \end{array}$
What per cent is 8 of..		What per cent is $\frac{1}{2}$ of..	

Maud (referring to Table No. 3). 8 is 50 per cent of 16; 8 is 12 $\frac{1}{2}$ per cent of 64; 8 is 66 $\frac{2}{3}$ per cent of 12.

By Assistant Superintendent. How do you know that?

Maud. I know that 4 is one-third of 12; 12 is 100 per cent of itself; one-third of 100 per cent is 33 $\frac{1}{3}$ per cent; eight is two times 4; two times 33 $\frac{1}{3}$ per cent is 66 $\frac{2}{3}$ per cent. Therefore 8 is 66 $\frac{2}{3}$ per cent of 12.

Harold. 8 is 16 $\frac{2}{3}$ per cent of 48; 8 is 33 $\frac{1}{3}$ per cent of 24; 8 is 25 per cent of 32; 8 is 20 per cent of 40.

Lida (referring to Table No. 4). $\frac{1}{2}$ is 33 $\frac{1}{3}$ per cent of $1\frac{1}{2}$; $\frac{1}{2}$ is 66 $\frac{2}{3}$ per cent of $\frac{3}{4}$; $\frac{1}{2}$ is 50 per cent of 1; $\frac{1}{2}$ is 20 per cent of 2 $\frac{1}{2}$.

By Assistant Superintendent. How do you know that?

Lida. 2 $\frac{1}{2}$ are five-halves; one-half is one-fifth of five-halves; five-halves is 100 per cent of itself; one-fifth of 100 per cent is 20 per cent.

Ruth. $\frac{1}{2}$ is 16 $\frac{2}{3}$ per cent of 3; $\frac{1}{2}$ is 25 per cent of 2; $\frac{1}{2}$ is 12 $\frac{1}{2}$ per cent of 4; $\frac{1}{2}$ is 75 per cent of $\frac{2}{3}$.

By Assistant Superintendent. How do you know it?

Ruth. In one-half there are six-twelfths; in two-thirds there are eight-twelfths; six-twelfths are three-fourths of eight-twelfths; eight-twelfths is 100 per cent of itself; three-fourths of 100 per cent are 75 per cent. Therefore one-half is 75 per cent of two-thirds.

Chart.

$\frac{1}{2} + \frac{1}{2} = ?$	$\frac{1}{2} + \frac{1}{2} = ?$
$\frac{1}{2} + \frac{1}{2} = ?$	$\frac{1}{2} + \frac{1}{2} = ?$
$\frac{1}{2} + \frac{1}{2} = ?$	$\frac{1}{2} + \frac{1}{2} = ?$
$\frac{1}{2} + \frac{1}{2} = ?$	$\frac{1}{2} + \frac{1}{2} = ?$
$\frac{1}{2} + \frac{1}{2} = ?$	$\frac{1}{2} + \frac{1}{2} = ?$
$\frac{1}{2} + \frac{1}{2} = ?$	$\frac{1}{2} + \frac{1}{2} = ?$

Herbert. One-half and one-third are ten-twelfths or five-sixths; one-half and two-thirds are fourteen-twelfths, or one and one-sixth; one-fourth and one-third are seven-twelfths; two-thirds and one-fourth are eleven-twelfths; one-third and one-sixth are one-half; one-fourth and one-sixth are five-twelfths.

Frank R. One-half and one-sixth are eight-twelfths, or two-thirds; two-thirds and one-sixth are five-sixths; three-fourths and one-sixth are eleven-twelfths; two-thirds and three-fourths are seven-twelfths, or one and five-twelfths; three-fourths and three-fourths are one and one-half; one-half and one-fourth are three-fourths.

Chart.

$\frac{1}{2} - \frac{1}{6} = ?$	$\frac{1}{2} - \frac{1}{6} = ?$
$\frac{1}{2} - \frac{1}{6} = ?$	$\frac{1}{2} - \frac{1}{6} = ?$
$\frac{1}{2} - \frac{1}{6} = ?$	$\frac{1}{2} - \frac{1}{6} = ?$
$\frac{1}{2} - \frac{1}{6} = ?$	$\frac{1}{2} - \frac{1}{6} = ?$
$\frac{1}{2} - \frac{1}{6} = ?$	$\frac{1}{2} - \frac{1}{6} = ?$
$\frac{1}{2} - \frac{1}{6} = ?$	$\frac{1}{2} - \frac{1}{6} = ?$

Ada. One-sixteenth taken from one half leaves seven-sixteenths; one-sixteenth taken from one-fourth leaves three-sixteenths; three-sixteenths taken from one-half leaves five-sixteenths; one-fourth taken from five-eighths leaves three-eighths, one-eighth taken from seven-sixteenths leaves five-sixteenths; one-eighth taken from three-fourths leaves five-eighths.

Arthur. Three-sixteenths taken from five-eighths leave seven-sixteenths; five-eighths taken from three-fourths leave one-eighth; three-eighths taken from one-half leave one-eighth; one-half taken from seven-eighths leaves three-eighths; three-fourths taken from seven-eighths leave one-eighth; one-fourth taken from nine-sixteenths leaves five-sixteenths.

Ohart.

$\frac{1}{2} + \frac{1}{2} = ?$	$\frac{2}{2} + \frac{2}{2} = ?$
$\frac{1}{4} + \frac{1}{4} = ?$	$\frac{1}{4} + \frac{3}{4} = ?$
$\frac{1}{8} + \frac{1}{8} = ?$	$\frac{3}{8} + \frac{5}{8} = ?$
$\frac{3}{8} + \frac{1}{8} = ?$	$\frac{1}{2} + \frac{1}{2} = ?$
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$\frac{1}{2} + \frac{1}{2} = ?$	$\frac{1}{2} + \frac{1}{2} = ?$

Cleo. How many one-sixths in two-thirds? There are four one-sixths in two-thirds. There are one and one-half one-sixths in one-fourth. There are three one-sixths in one-half. There are four one-sixths in two-thirds. There are four and one-half one-sixths in three-fourths. There are eight-ninths three-fourths in two-thirds.

Katherine. How many three-fourths in three-fourths? There is one three-fourths in three-fourths. There are two one-tenths in one-fifth. There are four one-tenths in two-fifths. There are six one-tenths in three-fifths. There are one and two-thirds three-tenths in one-half. There are eight one-tenths in four-fifths.

Q. If one yard of cloth cost 16 cents, how many yards can be bought for 64 cents?—Howard. Four yards. If one yard of cloth cost 16 cents, for 64 cents you can buy as many yards of cloth as 16 cents are contained times in 64 cents, which are four times. Therefore you can buy 4 yards of cloth for 64 cents, at 16 cents a yard.

Q. If 7 pounds of sugar cost 63 cents, what will one pound cost?—Katherine. 9 cents. If 7 pounds of sugar cost 63 cents, one pound will cost one-seventh of 63 cents, which is nine cents. Therefore one pound of sugar will cost 9 cents.

Q. If one yard of muslin cost 12 cents, what will 9 yards cost?—Ruth. \$1.08. If one yard cost 12 cents, 9 yards will cost 9 times 12 cents, which are one hundred eight cents, or one dollar and eight cents. Therefore 9 yards of muslin will cost \$1.08.

Q. If one dozen eggs are worth 25 cents, what are five dozen worth?—Willie. \$1.25. If one dozen eggs cost 25 cents, 5 dozen will cost 5 times 25 cents, which are \$1.25. Therefore five dozen eggs will cost \$1.25.

By Assistant Superintendent. What will three quarts of milk cost at 20 cents a gallon?—Robert. 15 cents. If one gallon of milk cost 20 cents, one quart will cost one-fourth of 20 cents, which is 5 cents. Three quarts will cost three times 5 cents, which are 15 cents. Therefore, if one gallon of milk cost 20 cents, three quarts will cost 15 cents.

By Assistant Superintendent. What will 16 eggs cost at 15 cents a dozen?—Willie B. 20 cents. If one dozen eggs cost 15 cents, four eggs will cost one-third of 15 cents, which is 5 cents. Sixteen eggs are four eggs more than one dozen. Fifteen cents and 5 cents are 20 cents. Therefore sixteen eggs will cost 20 cents, at 15 cents a dozen.

By Assistant Superintendent. What will 11 feet of rope cost, at 9 cents a yard?—Harold. If one yard of rope cost 9 cents, one foot will cost one-third of 9 cents, which is 3 cents. Eleven feet will cost eleven times 3 cents, which are 33 cents. Therefore, if one yard of rope cost 9 cents, eleven feet will cost 33 cents.

By Assistant Superintendent. Who can give another explanation?—Willie B. In eleven feet there are three and two-thirds yards. If one yard cost 9 cents, $3\frac{2}{3}$ yards will cost three and two-thirds times 9 cents, which are 33 cents. Therefore eleven feet of rope will cost 33 cents if one yard cost 9 cents.

Assistant Superintendent. Miss Smith, will you show us what your pupils can do in ordinary abstract problems?

Miss Smith. Certainly. Harold may pass to the board.

(Teacher dictates the problems, pupils work them on their slates, and Harold works his on the board.)

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HAMILTON SCHOOL—MISS WALKER, TEACHER.

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GARFIELD SCHOOL—MISS BARNHART, TEACHER.

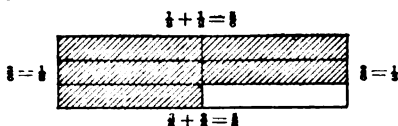
[March 28, 1895—Class A, grade fourth.]

Assistant Superintendent. Miss Barnhart, what have your pupils done in fractions?—Miss Barnhart. They are just ready for decimals.

Assistant Superintendent. I wish that you would show us how you taught adding and subtracting fractions. Miss Barnhart. Would you like us to show what we understand by the terms of a fraction?

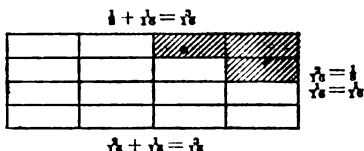
Assistant Superintendent. No; we will take that for granted. What we care about is to see the method of work.

Q. Explain how you add $\frac{1}{3}$ and $\frac{1}{3}$.—Ned:



Two-sixths equal one-third. Three-sixths equal one-half. The sum of three-sixths and two-sixths equals five-sixths.

Q. Explain how you add $\frac{1}{4}$ and $\frac{1}{4}$.

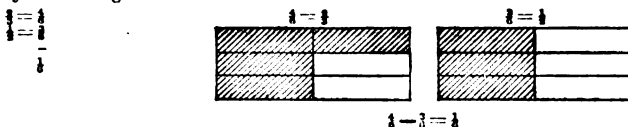


Two-sixteenths equal one-eighth. One-sixteenth equals one-sixteenth. One sixteenth and two-sixteenths equal three-sixteenths.

Q. Explain how you take two-thirds from one-half.—Will. You can not take two-thirds from one-half, because two-thirds are more than one-half.

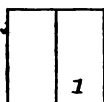
Q. See if you can take one-half from two-thirds.—Anna. Four-sixths equal two-thirds. Three-sixths equal one-half. Three-sixths taken from four-sixths equal one-sixth.

Q. Make diagram to show that.



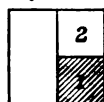
FIRST LESSON IN DECIMALS BY THE SAME CLASS.

Teacher: I want to see how quickly you can see one thing in another.



half of it.

Q. When I say one-half of anything, how many hundredths do you think?—Joe. Fifty hundredths.



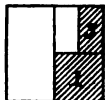
Q. How many hundredths of a square is this that I have made black [1]?—Freda. Twenty-five hundredths.

Q. How do you know that it is twenty-five hundredths?—Anna. Twenty five hundredths are one-half of fifty-hundredths.

Q. Give another reason.—Mary. Because twenty-five hundredths are one fourth of one hundred hundredths.

Q. When I say one-fourth of anything, how many hundredths do you think?—George. Twenty-five hundredths.

Q. When I say two-fourths, how many hundredths do you think?—Lela. Fifty-hundredths.



Q. What have I now done?—Susie. You have cut the one-fourth in two parts.

Q. When I cut the one-fourth in two, what do I get?—Ned. You get one-eighth.

Q. One-eighth is what part of one-fourth?—Ida. One-eighth is one-half of one-fourth.

Q. One-eighth is what part of one-half?—Louie. One-eighth is one-fourth of one-half.

Q. How many hundredths in one-eighth of anything?—Henry. Twelve and one-half hundredths.

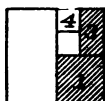
Q. How do you know that?—Montie. Because twelve and one-half hundredths are one-half of twenty-five hundredths, and twenty-five hundredths are one-fourth of one hundred hundredths.

Q. Give another reason.—George. Twelve and one-half hundredths are one-eighth of one hundred hundredths.

Q. Think of one-eighth and one-half. Tell me how you get one-eighth when you have one-half.—Lela. One-eighth is one-fourth of one-half.

Q. One-half is how many hundredths?—Mildred. One-half is fifty-hundredths.

Q. One-fourth of fifty-hundredths is how many hundredths?—Mary. Twelve and one-half hundredths.



Q. Who can tell me what I have done?—Anna. You have divided the one-eighth into two parts.

Q. What is each part called?—Henry. Each part is called one-sixteenth.

Q. How many sixteenths does it take to make one-eighth?—Mildred. It takes two sixteenths to make one-eighth.

Q. How many sixteenths does it take to make one-half?—Joe. Eight-sixteenths make one-half.

Q. How many hundredths of anything is one-sixteenth of it?—Willie. Six and one-fourth hundredths.

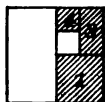
Q. Tell me how you know that?—Montie. One-eighth is twelve and one-half hundredths; one-sixteenth is one-half of one-eighth; one-half of twelve and one-half hundredths is six and one-fourth hundredths.

Q. Tell me how to get six and one-fourth hundredths, thinking of one-fourth?—Mabel. One-sixteenth is one-fourth of one-fourth; one-fourth of anything is twenty-five hundredths; one-fourth of twenty-five hundredths is six and one-fourth hundredths.

Q. Think of one-sixteenth with reference to one-half. How many sixteenths does it take to make one-half?—Henry. It takes eight-sixteenths to make one-half.

Q. When I say one-half how many hundredths do you think?—Ida. Fifty-hundredths.

Q. How can I get the value of one-sixteenth from that?—Mildred. Divide fifty-hundredths by eight, because eight-sixteenths make one-half.



Q. Look at the diagram and see how many hundredths have been made black?—Edith. Forty-three and three-fourths hundredths.

Q. Why?—Montie. Because the sum of one-fourth, one-eighth and one-sixteenth is forty-three and three-fourths hundredths.

BRYANT SCHOOL—MISS GREELISH, TEACHER.

[April 2, 1895—Class B, grade fourth—Children read the problems from books.]

Q. A man earned \$56½ one month, and \$70½ the next, and then gave \$85½ for a horse. How much money had he left? Make the statement.—Edna. \$56½ plus \$70½ minus \$85½ equals amount of money he had left.

Q. Give the solution.—Mary. \$56½ plus \$70½ equals what? ½ equal ½; ½ equal ½; ½ plus ½ equal 1½; \$56 plus \$70 equal \$126; \$126 plus 1½ equal \$127½. \$127½ minus \$85½ equals what? ½ equal ½; ½ equals ½; ½ minus ½ you can not take, borrow one, which makes it ½ and ½, or ¾; ¾ minus ½ equal ¼, or ½; \$85 from \$126 leave \$41. Therefore \$41½ is the amount of money he had left.

Q. A man bequeathed ½ of his estate to his wife, ¼ to each of his two sons, and the rest, which was \$2,400, to his daughter. What part did the daughter receive, and what was the value of the estate?

Q. How many sons did the man have?—Class. Two sons.

Q. What part did he give to each son?—John. He gave one-fourth to each one.

Q. How much did he give to his two sons?—John. He gave one-half to two sons.

Q. What does the word bequeath mean?—James. It means that when he died he left it by will.

Q. What does estate mean?—Class. Property and money.

Q. Tell me how to work the example.—Mary. $1 - \frac{1}{4} + \frac{1}{4} = ?$ \$2,400 multiplied by 6 equals the value of the estate.

Virgil. ½ equals ½; ¼ equals ¼; ½ plus ¼ equal ¾; $1 - \frac{3}{4}$ equals what? 1 equals ¾; ¾ minus ¾ equals ¼; \$2,400 multiplied by ¼ equal \$14,400.

Q. Why did you multiply by six?—Virgil. The daughter had one-sixth, and the whole would be six times that.

FRANKLIN SCHOOL—MISS BRUA, TEACHER.

[March 27, 1895—Class B, grade fifth.]

MENTAL ARITHMETIC.

- Q. What part of anything is expressed by 0.5 of it?—Charley. One-half of it.
- Q. What part of anything is expressed by 0.12 $\frac{1}{2}$ of it?—Lizzie. One-eighth of it.
- Q. Three-eighths of anything would equal how many hundredths?—May. Thirty-seven and one-half hundredths of anything are three-eighths of it.
- Q. Five-eighths of anything would equal how many hundredths?—Lizzie. Sixty-two and one-half hundredths of anything are five-eighths of it.
- Q. What part of a foot would 0.16 $\frac{2}{3}$ of it be?—James. Sixteen and two-thirds hundredths of a foot would be one-sixth of a foot, or two inches.
- Q. How many gills in 0.5 of a pint?—Conrad. Five-tenths of anything are one-half of it. There are four gills in one pint. One-half of four gills equals two gills. Therefore there are two gills in five-tenths of a pint.
- Q. How many gills in 0.25 of a pint?—Teresa. Twenty-five hundredths of anything are one-fourth of it. In one pint there are four gills. One-fourth of four gills is one gill. Therefore twenty-five hundredths of one pint are one gill.
- Q. How many pints in 0.5 of a quart?—Nettie. Five-tenths of anything are one-half of it. One-half of a quart equals one-half of two pints. One-half of two pints is one pint. Therefore five-tenths of a quart are one pint.
- Q. How many inches in 0.16 $\frac{2}{3}$ of a foot?—James. Sixteen and two-thirds hundredths of anything equal one-sixth of it. There are twelve inches in one foot. One-sixth of a foot is one-sixth of twelve inches, which is two inches. Therefore two inches are sixteen and two-thirds hundredths of a foot.
- Q. Compare 0.16 $\frac{2}{3}$ of a foot with 0.25 of a foot.—Teresa. Sixteen and two-thirds hundredths of a foot equal one-sixth of a foot. There are twelve inches in one foot. One-sixth of twelve inches is two inches. Twenty-five hundredths of a foot equal one-fourth of it. There being twelve inches in one foot, in one-fourth of a foot there are three inches. The difference between sixteen and two-thirds hundredths of a foot and twenty-five hundredths of a foot is one inch.
- Q. How many inches in 0.16 $\frac{2}{3}$ of a yard?—Keith. Sixteen and two-thirds hundredths of anything equal one-sixth of it. There being thirty-six inches in one yard, one-sixth of a yard equals one-sixth of thirty-six inches, which is six inches. Therefore there are six inches in sixteen and two-thirds hundredths of a yard.
- Q. Compare 0.16 $\frac{2}{3}$ of a foot with 0.16 $\frac{2}{3}$ of a yard.—Lawrence. Sixteen and two-thirds hundredths of anything equal one-sixth of it. There being 12 inches in one foot, in one-sixth of a foot there is one-sixth of 12 inches, which is two inches. There being 36 inches in one yard, in one-sixth of a yard there is one-sixth of 36 inches which is six inches. The difference between six inches and two inches is four inches.
- Q. Compare in rods 0.37 $\frac{1}{2}$ of a mile with 0.62 $\frac{1}{2}$ of a mile.—James. Thirty-seven and one-half hundredths of anything are three-eighths of it. Sixty-two and one-half hundredths of anything are five-eighths of it. One mile is equal to 320 rods. Five-eighths of a mile are 200 rods. Three-eighths of a mile are 120 rods. The difference between 120 rods and 200 rods is 80 rods.
- Q. What part of an hour is 0.33 $\frac{1}{3}$ of it?—Keith. Thirty-three and one-third hundredths of an hour are one-third of it. In one hour there are sixty minutes. In one-third of an hour there is one-third of sixty minutes, which is twenty minutes.
- Q. What part of an hour are 0.66 $\frac{2}{3}$ of it?—Teresa. Sixty-six and two-thirds hundredths of an hour are two-thirds of it; two-thirds of sixty minutes are forty minutes.
- Q. What would 0.66 $\frac{2}{3}$ of a day be in hours?—Peter. Sixteen hours.
- Q. What part of an hour are 0.75 of it?—Oscar. Seventy-five hundredths of an hour are three-fourths of it; three-fourths of sixty minutes are forty-five minutes.
- Q. If 0.12 $\frac{1}{2}$ of a yard of ribbon cost 3 cents, what would be the cost of a yard?—Myrtle. Twelve and one-half hundredths of anything equal one-eighth of it; if one-eighth of a yard cost three cents, eight-eighths, or a whole yard, will cost eight times three cents, which are twenty-four cents.
- Q. If 0.16 $\frac{2}{3}$ of a peck of potatoes cost 7 cents, what would be the cost of a peck?—Conrad. Sixteen and two-thirds hundredths of anything equal one-sixth of it; if one-sixth of a peck of potatoes cost seven cents, a whole peck will cost six times seven cents, which are forty-two cents.

ADAMS SCHOOL—MISS BORLAND, TEACHER.

[April 9, 1895—Class B, grade fifth.]

- Q. Reduce 7 bushels 3 pecks 7 quarts 1 pint to pints.—Frank. In one bushel there are 4 pecks; in 7 bushels there are 7 times 4 pecks; 7 times 4 pecks are 28 pecks; 28 pecks and 3 pecks are 31 pecks; in one peck there are 8 quarts; in 31 pecks there are 31 times 8 quarts; 31 times 8 quarts are 248 quarts; 248 quarts and 7 quarts are 255 quarts; in 1 quart there are 2 pints; in 255 quarts there are 255 times 2 pints; 255 times 2 pints are 510 pints; 510 pints and 1 pint are 511 pints.

Q. Change 1,120 gills to gallons.—Charles. One gallon equals 32 gills; 1,120 gills are equal to as many gallons as 32 gills are contained times in 1,120 gills; 32 gills are contained in 1,120 gills 35 times, or 35 gallons.

Q. Change 9 miles 31 rods to rods.—Frank. In one mile there are 320 rods; in 9 miles there are 9 times 320 rods; 9 times 320 rods are 2,880 rods; 31 rods and 2,880 rods are 2,911 rods.

Q. Change 515,280 square rods to higher denominations.—Robert. In one acre there are 160 square rods; in 515,280 square rods there are as many acres as 160 square rods are contained times in 515,280 square rods; 160 square rods are contained in 515,280 square rods 3,220 times, with a remainder of 80 square rods; in one square mile there are 640 acres; in 3,220 acres there are as many square miles as 640 acres are contained times in 3,220 acres. Josie. 640 acres are contained in 3,220 acres 5 times, and 20 acres remainder. Therefore there are 5 square miles 20 acres and 80 square rods in 515,280 square rods.

Q. How many cubic yards in a cellar 18 feet long, 15 feet wide, and 7 feet deep?—Frank. In a cellar 18 feet long, 15 feet wide, and 1 foot deep there are 270 cubic feet. Since the cellar is 7 feet deep there are 7 times 270 cubic feet; 7 times 270 cubic feet are 1,890 cubic feet. Since there are 27 cubic feet in one cubic yard, there are as many cubic yards as 27 cubic feet are contained times in 1,890 cubic feet; 27 cubic feet are contained in 1,890 cubic feet 70 times. Therefore there are 70 cubic yards in a cellar 18 feet long, 15 feet wide, and 7 feet deep.

KARNES SCHOOL—MISS WOODWARD, TEACHER.

[April 9, 1893—Class A, grade fifth.]

Q. What is the sum of 163 pounds 11 ounces 5 pennyweights 17 grains; 46 pounds 9 ounces 8 pennyweights 13 grains; 106 pounds 4 ounces 11 pennyweights 7 grains; 16 pounds 8 ounces 16 pennyweights and 9 grains?

(Clara's problem on the board.)

Lb.	Oz.	Pwt.	Gr.
163	11	5	17
46	9	8	13
106	4	11	7
16	8	16	9
<hr/>			
331	22	40	46
<hr/>			
333	10	1	22

Clara. 17 grains, 13 grains, 7 grains, 9 grains are 46 grains; 5 pennyweights, 8 pennyweights, 11 pennyweights, 16 pennyweights are 40 pennyweights; 11 ounces, 9 ounces, 4 ounces, 8 ounces are 32 ounces; 163 pounds, 46 pounds, 106 pounds, 16 pounds are 331 pounds. In 1 pennyweight there are 24 grains; in 46 pennyweights there are as many pennyweights as 24 pennyweights are contained times in 46 pennyweights, which is once and 22 grains over. Write down the 22. 40 pennyweights and 1 pennyweight are 41 pennyweights. In 1 ounce there are 20 pennyweights; in 41 pennyweights there are as many ounces as 20 pennyweights are contained times in 41 pennyweights, which are 2 times and 1 pennyweight over. Write down the 1 pennyweight. 32 ounces and 2 ounces are 34 ounces. In 1 pound there are 12 ounces; in 34 ounces there are as many pounds as 12 ounces are contained times in 34 ounces, which are two times and 10 ounces over. Write down the 10 ounces. 331 pounds and 2 pounds are 333 pounds.

Q. If a man travel 3 miles 35 rods 5 yards 2 feet and 5 inches in one hour, how far will he travel in 15 hours?—Mamie:

Mi.	Rd.	Yd.	Ft.	In.
3	35	5	2	5
				15
<hr/>				
45	525	75	30	75
<hr/>				
46	220	4½	0	3
				1
				9

15 times 5 inches are 75 inches; 15 times 2 feet are 30 feet; 15 times 5 yards are 75 yards; 15 times 35 rods are 525 rods; 15 times 3 miles are 45 miles.

In one foot there are 12 inches; in 75 inches there are as many feet as 12 inches are contained times in 75 inches, which are 6 times, or 6 feet, and three left over. Write down the three inches. Carry forward 6 feet. 30 feet and 6 feet are 36 feet. In one yard there are three feet; in 36 feet there are as many yards as three feet are contained times in 36 feet, which are 12 times, or 12 yards. 12 yards and 75 yards are 87 yards. In one rod there are 5½ yards; in 87 yards there are as many rods as 5½ yards are contained times in 87 yards, which are 15, and 4½ yards left over. ½ yard equals ½ foot. Write down the one foot. ½ foot equals 6 inches. 6 inches and 3 inches equals 9 inches. 525 rods and 15 rods are 540 rods. In one mile there are 320 rods; in 540 rods there are as many miles as 320 rods are contained times in 540 rods, which is once and 220 rods left over. Write down the 220 rods. 45 miles and 1 mile are 46 miles.

Q. A milkman had 23 gallons 1 pint and 2 gills of milk. He sold 17 gallons 1 quart 1 pint 3 gills to one man, and $\frac{1}{2}$ of the remainder to another man. How much did the second man receive?—Blanche:

Gal.	Qt.	Pt.	Gi.
23	0	1	2
17	1	1	3
<hr/>			
7) 5	2	1	3
<hr/>			
$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
<hr/>			
3		2 $\frac{1}{2}$	

3 gills from 2 gills you can not take; so you borrow 1 pint, which is equal to 4 gills. 4 gills and 2 gills are 6 gills. 3 gills from 6 gills leave 3 gills. 1 pint from no pints you can not take; so borrow one gallon, which is equal to 4 quarts. Borrow 1 quart, which is equal to 2 pints. 1 pint from 2 pints leaves 1 pint. 1 quart from 3 quarts leaves 2 quarts. 17 gallons from 22 gallons leave 5 gallons.

If he sold $\frac{1}{2}$ of the remainder to the second man, the second man would receive $\frac{1}{2}$ of 5 gallons 2 quarts 1 pint 3 gills. $\frac{1}{2}$ of 5 gallons equals $\frac{1}{2}$ gallon. $\frac{1}{2}$ of 2 quarts equals $\frac{1}{2}$ quart. $\frac{1}{2}$ of 1 pint equals $\frac{1}{2}$ pint. $\frac{1}{2}$ of 3 gills equals $\frac{3}{2}$ gill. $\frac{1}{2}$ of a gallon equals $\frac{1}{2}$ quart. $\frac{1}{2}$ quart and $\frac{1}{2}$ of a quart equals $\frac{1}{2}$ quart, equal 3 quarts and $\frac{1}{2}$ remainder. $\frac{1}{2}$ of a quart equals $\frac{1}{2}$ of a pint. $\frac{1}{2}$ of a pint and $\frac{1}{2}$ of a pint equals $\frac{1}{2}$ of a pint. $\frac{1}{2}$ of a pint equals $\frac{1}{2}$ gills. $\frac{1}{2}$ gills and $\frac{1}{2}$ of a gill equals $\frac{1}{2}$ gills, equal 2 $\frac{1}{2}$ gills. My result is 3 quarts 2 $\frac{1}{2}$ gills.

Q. How many cords of wood in a pile 48 feet long, 4 feet wide, and 5 $\frac{1}{2}$ feet high? How much will it cost, at \$3.75 a cord?—Fred:

48 ft.	
4	
192 sq. ft.	
5 $\frac{1}{2}$	
960	
96	
128 cu. ft. 1056 cu. ft. (8 $\frac{1}{2}$ = 8 $\frac{1}{2}$ c.	\$3.75
1024	8 $\frac{1}{2}$
32	30.00
128 — $\frac{1}{2}$	.93 $\frac{1}{2}$
	\$30.93 $\frac{1}{2}$

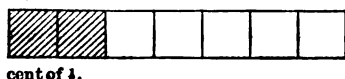
Mabel. If the pile is 48 feet long, 4 feet wide, and 5 $\frac{1}{2}$ feet high, the number of cubic feet is 48 feet times 4 feet times 5 $\frac{1}{2}$ feet, which are 1,056 cubic feet. If there are 128 cubic feet in one cord, there are as many cords in 1,056 cubic feet as 128 cubic feet are contained times in 1,056 cubic feet, which are 8 $\frac{1}{2}$ times, or 8 $\frac{1}{2}$ cords. Therefore if one cord cost \$3.75, 8 $\frac{1}{2}$ cords will cost 8 $\frac{1}{2}$ times \$3.75, which are \$30.93 $\frac{1}{2}$.

LINWOOD SCHOOL—MISS STEARNS, TEACHER.

[March 23, 1895—Class C, grade sixth.]

Assistant Superintendent. Miss Stearns, will you show us with your higher class how you begin to compare fractions with percentage, and to have the pupils clearly comprehend the relation between broken numbers and the term per cent?

(Miss Stearns sends class to the board.)



cent of $\frac{1}{2}$.

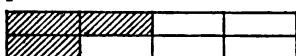
Louise. $\frac{3}{8}$ equal what per cent of one and each of its parts? $\frac{3}{8}$ = 28 $\frac{1}{2}$ per cent of 1; $\frac{3}{8}$ = 33 $\frac{1}{3}$ per cent of $\frac{1}{2}$; $\frac{3}{8}$ = 40 per cent of $\frac{1}{3}$; $\frac{3}{8}$ = 66 $\frac{2}{3}$ per cent of $\frac{1}{4}$; $\frac{3}{8}$ = 100 per cent of $\frac{1}{5}$; $\frac{3}{8}$ = 200 per cent of $\frac{1}{6}$.

Q. How do you know that two-sevenths is 33 $\frac{1}{3}$ per cent of six sevenths?—Louise. Because two-sevenths are one-third of six-sevenths, and one-third of 100 per cent is 33 $\frac{1}{3}$ per cent.



Marietta. $\frac{3}{8}$ is what per cent of one and each of its parts? $\frac{3}{8}$ = 41 $\frac{1}{3}$ per cent of 1; $\frac{3}{8}$ = 45 $\frac{1}{3}$ per cent of $\frac{1}{2}$; $\frac{3}{8}$ = 50 per cent of $\frac{1}{3}$; $\frac{3}{8}$ = 55 $\frac{1}{3}$ per cent of $\frac{1}{4}$; $\frac{3}{8}$ = 62 $\frac{1}{2}$ per cent of $\frac{1}{5}$; $\frac{3}{8}$ = 71 $\frac{1}{3}$ per cent of $\frac{1}{6}$; $\frac{3}{8}$ = 83 $\frac{1}{3}$ per cent of $\frac{1}{7}$; $\frac{3}{8}$ = 100 per cent of $\frac{1}{8}$; $\frac{3}{8}$ = 125 per cent of $\frac{1}{9}$; $\frac{3}{8}$ = 166 $\frac{2}{3}$ per cent of $\frac{1}{10}$; $\frac{3}{8}$ = 250 per cent of $\frac{1}{12}$; $\frac{3}{8}$ = 500 per cent of $\frac{1}{16}$.

Q. How do you know that $\frac{3}{8}$ are 500 per cent of one-twelfth?—Marietta. Five-twelfths are five times one-twelfth. One whole thing is 100 per cent, and five whole things are five times 100 per cent, or 500 per cent.



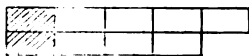
Bessie. Tell what per cent three-eighths are of one and each of its parts. $\frac{3}{8}$ = 37 $\frac{1}{2}$ per cent of one; $\frac{3}{8}$ = 42 $\frac{1}{2}$ per cent of $\frac{1}{2}$; $\frac{3}{8}$ = 50 per cent of $\frac{1}{3}$; $\frac{3}{8}$ = 60 per cent of $\frac{1}{4}$; $\frac{3}{8}$ = 75 per cent of $\frac{1}{5}$; $\frac{3}{8}$ = 100 per cent of $\frac{1}{6}$; $\frac{3}{8}$ = 150 per cent of $\frac{1}{8}$; $\frac{3}{8}$ = 300 per cent of $\frac{1}{16}$.

Q. Show how you know three-eighths are 150 per cent of one-fourth.—Bessie. Three-eighths are one and one-half times one-fourth. One and one-half times anything are equal to 150 per cent of it.



Etta. What per cent is one-half of one and each of its parts? $\frac{1}{2} = 50$ per cent of 1; $\frac{1}{2} = 57\frac{1}{2}$ per cent of $\frac{2}{3}$; $\frac{1}{2} = 66\frac{2}{3}$ per cent of $\frac{3}{4}$; $\frac{1}{2} = 80$ per cent of $\frac{4}{5}$; $\frac{1}{2} = 100$ per cent of 1; $\frac{1}{2} = 133\frac{1}{3}$ per cent of $\frac{2}{3}$; $\frac{1}{2} = 200$ per cent of $\frac{1}{4}$; $\frac{1}{2} = 400$ per cent of $\frac{1}{8}$.

Q. Show how you know that $\frac{1}{2}$ is 400 per cent of $\frac{1}{8}$.—Etta. One-half is four times one-eighth; four times anything are 400 per cent of it.



$\frac{1}{2} = 200$ per cent of $\frac{1}{4}$.

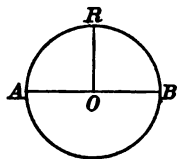
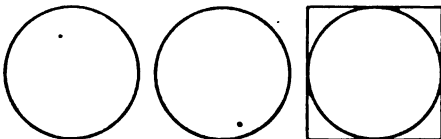
Don. Tell what per cent $\frac{1}{2}$ are of one and each of its parts. $\frac{1}{2} = 22\frac{1}{2}$ per cent of 1; $\frac{1}{2} = 25$ per cent of $\frac{2}{3}$; $\frac{1}{2} = 28\frac{1}{3}$ per cent of $\frac{3}{4}$; $\frac{1}{2} = 33\frac{1}{3}$ per cent of $\frac{4}{5}$; $\frac{1}{2} = 40$ per cent of 1; $\frac{1}{2} = 50$ per cent of $\frac{2}{3}$; $\frac{1}{2} = 100$ per cent of $\frac{1}{4}$; $\frac{1}{2} = 200$ per cent of $\frac{1}{8}$.

Q. Show how you know that two-ninths are $33\frac{1}{3}$ per cent of two-thirds.—Don. Two-ninths are one-third of two-thirds; one-third of anything is $33\frac{1}{3}$ per cent of it.

GARFIELD SCHOOL.—MR. C. W. THOMPSON, PRINCIPAL.

[March 28, 1895—Class A, grade sixth.]

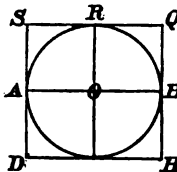
THE FIRST LESSON ON THE RELATION OF THE CIRCLE TO THE SQUARE.



Q. What do you call the line AB?—Cora. Diameter.

Q. What do you call the line RO?—Alice. The radius.

Q. What is the relation of the radius to the diameter?—Ruth. One-half.



Q. The figure SQHD is a circumscribed square. It touches the circle at how many points?—Ruth. At four points.

Q. At what point of the sides does the square touch the sides?—Hunter. In the middle of the sides.

Q. What is the relation of each side of the square, as DH or HQ, to the diameter of the circle AB?—Frank. Just the same length.

Q. Figure ASRO is the square of the radius. What is the relation of the square of the radius to the large square?—Helen. One-fourth of it.

Q. What is the relation of the square of the diameter to this square itself, SQHD?—Roy. One-half.

Teacher. Wrong. I shall repeat the question. What is the relation of the square of the diameter to the large square?—Howard. They are the same. (Correct.)

Q. If I have the square of the radius, SAOR, and want to find the large square, how may I do it?—Jean. Multiply it by four.

Q. Will the area of the large square then be more or less than the area of the circle?—Blanche. It will be more.

Q. 3.1416. The relation of the square of the radius to the area of the circle may be found by multiplying the square of the radius by 3.1416. That number is called "pi." Now, if you had the square of the radius, how would you find the area of the circle?—Howard. Multiply it by 3.1416.

Q. What is the relation of AB to DH?—Edward. They are the same.

Q. If two persons started from the point A, one traveling around the four sides of the square and the other around the circumference of the circle, until they return to the starting point, which would walk the longer distance?—Malcolm. The one that would go around the square.

Q. The one who traveled the distance around the square would travel how many times the diameter?—Lula. Four times the diameter.

Q. The one who traveled around the circumference would travel 3.1416 times the diameter, more than three times and less than four times the diameter. If you had the diameter of a circle, how would you find the circumference?—Myrtle. Multiply the diameter by 3.1416.

Q. The diameter is thirty; find the radius and the circumference—that is, the distance around the circle. What is the length of the radius?—Alice. The radius is fifteen.

Q. What is the distance around the circle?—Howard. 94.248.

Q. What do you call the line AO?

Walter. Area. (Wrong.)

- Malcolm. Radius. (Correct.)
 Q. If AO equals twenty, what does the square AOBS equal?
 Jean. Eighty. (Wrong.)
 Hunter. 320. (Wrong.)
 Ruth. 40. (Wrong.)
 Helen. 400. (Correct.)
 Q. Will you please tell the class how you got 400?—Helen. AO is twenty, the square is twenty times twenty.
 Q. What is the square of the radius when the radius is twenty?—Frank. 400.
 Q. You may tell me the area of the circle.—Dick. 1,256.64.
 Q. Tell us how you got it.—Dick. Multiplied 3.1416 by 400.
 Q. π . What do you call that character?—Roy. Pi.
 Teacher. "R," let that stand for radius. R^2 , that means the square of the radius. $\pi \times R^2$ = area of the \odot . \odot means circle.
 Q. Who can read this?—Alice. Pi multiplied by the square of the radius equals area of circle.
 Teacher? $\pi \times D$ = circ. of \odot . D stands for diameter; circ. for circumference. Who can read it?—Juliet. Pi multiplied by the diameter equals circumference of circle.
 Q. Take this problem and apply those formulas to the solution. The radius is 30; find the circumference and the area of the circle.
 Alice. The circumference is 188.496
 Cora. The area of the circle is 2,827.44.
 Q. In finding the circumference of the circle what is the first step?—Malcolm. Find the diameter.
 Q. What does the diameter equal?—Helen. The diameter equals 60.
 Q. And the next step?—Roy. Sixty times 3.1416.
 Q. In the second part of the problem, to find the area, what is the first step?—Howard. Find the square of the radius, which equals 900.
 Q. And the next step?—Howard. Multiply 900 by 3.1416.

EMERSON SCHOOL—MISS MOLYNEAUX, TEACHER.

[April 8, 1895—Classes C and A, grade sixth.]

MENTAL ARITHMETIC.

- Teacher. Close your books.
 Q. How many times $8\frac{1}{2}$ per cent of a quantity is $41\frac{1}{2}$ per cent of it?—Rose. $41\frac{1}{2}$ per cent is 5 times $8\frac{1}{2}$ per cent.
 Q. Give the analysis.—Louisa. $41\frac{1}{2}$ per cent of a quantity equal $\frac{1}{2}$ of it; $8\frac{1}{2}$ per cent of a quantity equals $\frac{1}{4}$ of it. $\frac{1}{2}$ are five times $\frac{1}{4}$.
 Q. A corporation declared a dividend of $\frac{1}{4}$ of its proceeds. The rest was added to the sinking fund. What per cent was added to the sinking fund?
 Ernst. $16\frac{2}{3}$ per cent.
 Florence. $\frac{1}{4}$ equals the whole. If the dividend was $\frac{1}{4}$, the rest would be $\frac{3}{4}$. $\frac{3}{4}$ of a quantity equals $16\frac{2}{3}$ per cent of it.
 Q. A owning $\frac{1}{4}$ of a mill, sold $62\frac{1}{2}$ per cent of his share to B, who owned the rest. What part of the mill did each then own?
 Lela. A owned 30 per cent and B 70 per cent.
 Rosa. A owned $\frac{1}{4}$ of the mill, and sold $62\frac{1}{2}$ per cent, which equals $\frac{1}{2}$ of a quantity. If A owned $\frac{1}{4}$, then he sold five-eighths of four-fifths, which is one-half. He had left the difference between four-fifths and one-half, which is $\frac{1}{10}$, or 30 per cent. Then A owned 30 per cent and B 70 per cent.
 Q. What per cent of the square of eight is the square of four?
 Clare. 25 per cent.
 Herman. The square of 8 is 64. The square of 4 is 16. 16 is 25 per cent of 64.
 Ernst. The square of 8 is 64. The square of 4 is 16. Sixteen sixty-fourths equal one-fourth. One-fourth of a quantity equals 25 per cent of it.
 Q. What is the relation of a certain quantity to $116\frac{2}{3}$ per cent of it?
 Alice. The relation is as 6 to 7.
 Florence. 100 per cent equals six-sixths. $116\frac{2}{3}$ per cent equals $\frac{1}{3}$ more than $\frac{1}{3}$, which is $\frac{1}{3}$. The relation of 100 per cent to $116\frac{2}{3}$ per cent is as 6 to 7.
 Q. Find a certain number of which $66\frac{2}{3}$ per cent exceeds 40 per cent by 200.
 Harry. 750.
 Walter. $66\frac{2}{3}$ per cent of a quantity minus 40 per cent of the same quantity equals $26\frac{2}{3}$ per cent of the quantity. $26\frac{2}{3}$ per cent of a quantity equals $\frac{1}{4}$ of it. If 200 is $\frac{1}{4}$ of the quantity, $\frac{1}{4}$ is $\frac{1}{4}$ of 200, which is 50. $\frac{1}{4}$ would be 15 times 50, which are 750.
 Louisa. $66\frac{2}{3}$ per cent of a quantity equals $\frac{2}{3}$ of it. 40 per cent of the quantity equals $\frac{2}{5}$ of it. $\frac{2}{3}$ minus $\frac{2}{5}$ equal $\frac{4}{15}$. If 200 is $\frac{4}{15}$, $\frac{1}{15}$ would be $\frac{1}{4}$ of 200, which is 50. $\frac{1}{15}$ would be 15 times 50, which is 750.
 Q. Find the number of which 21 is $58\frac{1}{3}$ per cent.
 Jacob. 36.

Harry. $5\frac{1}{2}$ per cent of a quantity equals $\frac{1}{2}$ of it. If 21 is $\frac{1}{2}$ of a quantity, $\frac{1}{2}$ of the quantity would be $\frac{1}{2}$ of 21. $\frac{1}{2}$ of 21 is 3. $\frac{1}{2}$, or the whole number, would be 12 times 3. 12 times 3 are 36.

Q. A farmer had 160 acres of land, and sold $87\frac{1}{2}$ per cent of it. What per cent of the land did he have left, and how many acres did he sell?

Agnes. $12\frac{1}{2}$ per cent. Sold 140 acres.

Cora. $87\frac{1}{2}$ per cent of a quantity is $\frac{7}{8}$ of it. $\frac{7}{8}$ of 160 acres are 140. He sold 140 acres and retained 20 acres, or one-eighth, or $12\frac{1}{2}$ per cent.

Q. A quantity of flour is worth \$84. What is $116\frac{2}{3}$ per cent of the quantity worth?

Alice. \$98.

Agnes. 100 per cent of a quantity equals $\frac{1}{2}$ of it. $116\frac{2}{3}$ per cent equals $\frac{1}{2}$ more than $\frac{1}{2}$. \$84 equals $\frac{1}{2}$. One-sixth would be one-sixth of \$84, which is \$14. If \$14 is one-sixth, one-sixth more would be \$84 plus \$14, which is \$98.

Florence. $116\frac{2}{3}$ per cent equals $\frac{1}{2}$ of a quantity. If $\frac{1}{2}$ cost \$84, $\frac{1}{2}$ would cost $\frac{1}{2}$ of \$84, which is \$14, and $\frac{1}{2}$ would cost 7 times \$14, which is \$98.

Q. A man paid \$42 for an overcoat, which was $12\frac{1}{2}$ per cent less than the price asked by the retailer. What was the asking price?

Jennie. \$48.

James. $12\frac{1}{2}$ per cent of a quantity equals $\frac{1}{8}$ of it. If \$42 is $\frac{1}{8}$ of the asking price, $\frac{1}{8}$ would be $\frac{1}{8}$ of \$42, which is \$6. $\frac{1}{8}$, or the whole asking price, would be 8 times \$6, which are \$48.

Jacob. The man must have $\frac{1}{8}$ at first. $12\frac{1}{2}$ per cent of a quantity equals $\frac{1}{8}$ of it. He sold it for $\frac{1}{8}$ less than he asked for it; he must have sold it for $\frac{1}{8}$ of the asking price. If \$42 is $\frac{1}{8}$ of the asking price, $\frac{1}{8}$ of the asking price would be $\frac{1}{8}$ of \$42, which is \$6, and $\frac{1}{8}$ would be 8 times \$6, which are \$48.

Q. What is the relation of 5 per cent of a quantity to $66\frac{2}{3}$ per cent of a quantity?—Harry. 5 per cent equals $\frac{1}{20}$ of it. $66\frac{2}{3}$ per cent of the quantity equals $\frac{2}{3}$ of it. $\frac{1}{20}$ equals $\frac{1}{30}$. $\frac{1}{30}$ equal $\frac{1}{2}$. The relation is as 3 is to 40.

WHITTIER SCHOOL—MISS VAN METER, TEACHER.

[April 1, 1895—Beginning Class A, grade sixth.]

Assistant Superintendent. Miss Van Meter, what have your pupils done in the measuring of surfaces?

Miss Van Meter. They are beginning to find the area of rectangles and triangles.

Assistant Superintendent. Have they studied the relation of the rectangle to the triangle?

Miss Van Meter. They have not.

Assistant Superintendent. I wish that you would give us a lesson this morning to show how they connect the idea of the rectangle with the idea of the triangle.

Q. What have I in my hand [shows a square inch piece of paper, which is used as a unit throughout the lesson]?—George. A rectangle.

Q. Just by looking at it, what would you call it in regard to size?—Chester. A square inch.

Q. What name would be given to this figure [holding up a larger piece of paper]?—Lula. That is a rectangle.

Q. How may I ascertain the number of square inches in this rectangle?—John. Multiply the length by the breadth.

Q. Before I can multiply the length by the breadth, what must I find?—John. How long and how wide it is?

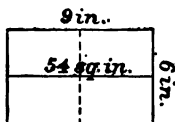
Q. I have measured this rectangle, and have found it to be 9 inches long and 6 inches wide. Who can tell me how many square inches can be cut from this piece of paper [holding up the paper rectangle and the square inch unit]?—Josie. Fifty-four square inches.

Q. In other words, the area of this rectangle is how much?—Josie. Fifty-four square inches.

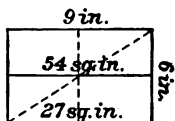
Q. What have I in my hand now [holding up a square piece of paper]?—Percy. A square.

Q. What else may it be called?—Mamie. A rectangle.

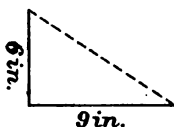
Q. If I fold the paper containing 54 square inches into two equal parts, what is the number of square inches in each part?—Fannie. Twenty-seven square inches.



Q. In what other way can I fold this paper in order to have just one-half of its entire area?—Lula. Fold it from corner to corner.



Q. What do you call this figure?—Arthur. A triangle.



Q. And still what is the relation of this figure to the rectangle?—Edith. It is one-half of it.

Q. What, then, is the area of the triangle?—Josie. Twenty-seven square inches.

Q. If the rectangle is 9 inches long and 6 inches wide, by folding it that way I still have the length 9 inches and the width 6 inches; but you tell me the area is 27 square inches. Now, from that fact, how may the area of a triangle be found?—Lottie. Multiply the length by the breadth and divide by two.

Q. Instead of calling the names *length* and *breadth* of the rectangle, the 9 inches may be called the *base* of the triangle, and the breadth of the rectangle, 6 inches, now becomes the *altitude* of the triangle. Now, using other terms, how may we find the area of the triangle?—Roy. Multiply the base by one-half of the altitude.

Q. If the base is 9 inches and the altitude 6 inches, what is the area?—Roy. The area is 27 square inches. 9 times three square inches are twenty-seven square inches.

Practical problems by the same class, given by Assistant Superintendent:

Q. What will 7 bushels 3 pecks 4 quarts of cherries cost, at \$4.25 a bushel?—Chester. First reduce the 7 bushels 3 pecks 4 quarts to quarts, which are 252 quarts. Since there are 32 quarts in one bushel, in 252 quarts there would be as many bushels as 32 is contained times in 252, which are $7\frac{7}{8}$ times, or $7\frac{7}{8}$ bushels. $7\frac{7}{8}$ bushels would cost $7\frac{7}{8}$ times \$4.25, which are \$33.46 $\frac{1}{2}$.

Q. How many square rods in $\frac{3}{4}$ of an acre?—Mamie. 106 $\frac{1}{2}$ square rods. There are 160 square rods in one acre. In two-thirds of an acre there are two-thirds of 160 square rods.

Q. Two persons observed an eclipse of the moon, one seeing it at 9 p. m. and the other at 11.30 p. m. What was the difference in their longitude? (Pupils were ready with an answer in less than one-half minute.)—Herman. 37° 30'.

Q. If 15 equal bars of silver weigh 24 pounds 8 ounces 16 pennyweights, what is the weight of each bar? (Several had answers in one minute.)—A. 1 pound 7 ounces 15 pennyweights 17 $\frac{1}{2}$ grains.

Q. What part of a rod are 3 feet, 4 inches? (Three-fourths of the pupils had an answer in one minute.)—A. $\frac{3}{4}$.

Q. Reduce 0.096 of a bushel to a decimal of a pint. (One-half of the class had an answer in one minute.)—A. 6.144.

WHITTIER SCHOOL—MISS SIMMONS, TEACHER.

[April 1, 1895—Class A, grade sixth.]

Q. If you wish to carpet this room, in what direction shall the strips run?—Roy. Lengthwise.

Q. If the strips run lengthwise, what is the first thing to be found out?—Earl. The length of the room.

Teacher. You may find the length of the room [Roy measures the length of the room with a yard measure].—Roy. The room is thirty feet long.

Q. How do you buy carpet?—Frank. By the yard.

Q. How many yards are required for one strip?—Walter. Ten yards.

Q. What is the next question to ask yourself concerning the room?—Phil. How wide is the room?

Q. Why do you wish to find the width of the room?—Earl. To find how many strips are required.

Teacher. Find the width of the room [Earl measures the width of the room with a yard measure].—Earl. The room is 22 feet wide.

Q. How wide is carpet?—Clifford. One yard wide.

Q. Is all carpet one yard wide?—Clifford. Some carpet is three-fourths of a yard wide.

Q. We will suppose the carpet that we will use to be one yard wide. How many yards will be required for the width of this room?—Mildred. 7 $\frac{1}{2}$ yards.

Q. If the carpet is one yard wide, how many strips are required?—Willie. 7 $\frac{1}{2}$ strips.

Q. Could you buy $\frac{3}{4}$ of a strip?—Willie. No, ma'am.

Q. How many strips, then, are required?—Harrell. Eight strips.

Q. How many yards are required for one strip?—Roy. Ten yards.

Q. How many strips altogether?—Roy. Eight strips.

Q. How many yards are required for this room?—Anna. Eighty yards.

Q. Is your carpet a perfectly plain surface?—Phil. No; the carpet is figured and should be matched.

Q. How many yards would be required if there were no figures to be matched?—Walter. Eighty yards.

Q. We will suppose that there are figures to be matched. Now, if we were laying the carpet, how many strips would we lay simply for the length required?—Clara. One strip.

Teacher. Yes, there would be just one strip cut off the required length. What would occur on the second, third, fourth strips, and so on?—Clara. There would be a certain number of inches cut off or turned under.

Q. What would you call that quantity cut off on account of matching of figures?—Delbert. Waste or loss.

Q. I will say that there are eight inches loss in matching the figures; what will you do with the eight inches?—Harrell. We will reduce them to parts of a foot.

Q. What would that equal?—Harrell. Two-thirds of a foot.

Q. Who would have to stand this loss of $\frac{2}{3}$ foot?—Phil. The buyer.

Q. How long is each strip?—Mattie. 30 feet long.

Q. How many feet would you have to buy for the second, third, fourth strips, and so on?—Delbert. 80 $\frac{2}{3}$ feet.

Q. How many yards would that equal?

Theo. Ten yards.

Mattie. Ten and two-ninths yards.

Q. How many strips ten and two-ninths yards long would you require?—Roy. Seven strips.

Q. Why did you say seven strips?—Roy. The first strip was only ten yards long, the remaining seven strips would be 10 $\frac{2}{9}$ yards long.

Q. How long are those seven strips?—Clara. Ten and two-ninths yards long.

Q. How many strips of that length do you require?—Walter. Seven strips, each 10 $\frac{2}{9}$ yards long.

Q. What does that equal?—Class. 71 $\frac{2}{9}$ yards.

Q. What is the length of the first strip?—Willie. Ten yards.

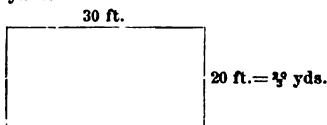
Q. Making a total of how many yards?—Mattie. 81 $\frac{2}{9}$ yards.

Teacher. You may draw on your slates the illustration of the floor of a room, marking the dimensions. Give the dimensions of yours.

Mattie. Twenty-five feet long and twenty-two feet wide.

Theo. Thirty feet long, twenty feet wide.

Q. We will solve Theo's problem. In the last problem we took carpet one yard wide. Suppose we take for this problem carpet $\frac{2}{3}$ yard wide, the strips running lengthwise. How many yards wide is the room?—Emma. Six and two-thirds yards.



Q. Instead of reducing it to 6 $\frac{2}{3}$ yards, what may you call it more conveniently?—Easie. Seven strips.

Q. No; I did not ask for the number of strips.—Roy. Twenty-thirds yards.

Q. Suppose the carpet is three-fourths of a yard wide; how many strips are required for a room 2 $\frac{2}{3}$ yards wide?—Earl. 8 $\frac{2}{3}$ strips; no, 9 strips.

Q. Why did you not say 8 strips instead of 9 strips?—Earl. Because you can not buy $\frac{2}{3}$ of a strip. You must buy one whole strip, which makes 9 strips.

Q. How many yards in length is the room?—Clifford. Ten yards.

Q. Supposing there is a loss of nine inches in matching figures, on how many of the nine strips would there be a waste of nine inches?—Harrel. On eight strips.

Q. How much would that nine inches loss on each of eight strips equal in yards?—Mattie. One-fourth of a yard on each strip.

Q. How many yards long, then, would each of those eight strips be?—Anna. Ten and one-fourth yards.

Q. How many yards would it require for eight strips ten and one-fourth yards long?—Anna. Eighty-two yards.

Q. How many yards would the first strip require?—Willie. Ten yards.

Q. Why did we not allow for loss on that first strip?—Fred. The first strip would be cut off just the length of the room.

Q. How many yards shall we buy for that room?—Roy. Ninety-two yards.

Teacher. You may solve your individual problems on your slates.

Assistant Superintendent. Miss Simmons, we shall not wait for the pupils to finish their problems and analyze them. This will be sufficient to show your plan of developing the subject.

MORSE SCHOOL—MRS. MARSHALL, TEACHER.

[April 1, 1895.—Class B, grade seventh.]

Assistant Superintendent. I would like to have you take up some work, so that we may get an idea of how you teach the applications of percentage in profit and loss and in commission and brokerage; a short lesson in each one. You have passed beyond this subject, have you not?—Mrs. Marshall. Yes, sir.

Q. A drover bought cattle at \$65 a head, and sold them for \$84.50 a head. What is the gain per cent?—(Frank repeats question.)

Q. What is the first step that we take?—Olga. Find the gain in dollars.

Q. What is the next step?

Fred. Divide the gain by the cost, and that will give the rate.

(21 pupils out of 41 had an answer in one-half minute.)

(Frank. 30 per cent.)

Alfred. If a drover bought cattle at \$65 a head, and sold them for \$84.50 a head, he gained the difference between \$84.50 and \$65, which is \$19.50.

Q. What do you say next?—Ethel. The gain is as many per cent as \$65 is contained times in \$19.50, which is 30 hundredths times or 30 per cent.

Q. In the subject of percentage the \$84.50 would be called what?—Una. Amount.

Q. To what would the \$65 be equivalent in percentage?—Maggie. Base.

Q. What would you be required to find in percentage?—Karl. The rate per cent.

Q. What do you always do to find the rate per cent of gain or loss?

Julia. Divide the gain or loss by the cost, and the amount expressed in hundredths is the gain or loss per cent.

Jessie. Divide the gain or loss in dollars by the cost.

Q. A man sold a watch for \$180, and lost $16\frac{1}{2}$ per cent. What was the cost? Give the first step in working the problem?—Alfred M. 100 per cent minus $16\frac{1}{2}$ per cent is $83\frac{1}{2}$ per cent.

Q. Why do you take $16\frac{1}{2}$ per cent from 100 per cent?

Julia. Because \$180 is only $83\frac{1}{2}$ per cent of the cost.

(Four pupils only did not have an answer in $\frac{1}{2}$ of a minute.)

Una. \$216.

Q. Give a full analysis of the problem.—Florence. The cost of the watch is 100 per cent of itself, and he lost $16\frac{1}{2}$ per cent. The difference is $83\frac{1}{2}$ per cent, or \$180.

Q. How do you find the cost when you have that?

Florence. \$180 is $83\frac{1}{2}$ per cent of the cost of the watch, or $\frac{1}{2}$ of the cost; one-sixth of the cost of the watch equals one-fifth of \$180, which is \$36, and six-sixths, or the cost of the watch, are six times \$36, which are \$216.

Myrtle. 100 per cent, the cost of the watch, less $16\frac{1}{2}$ per cent equals $83\frac{1}{2}$ per cent, or \$180. 1 per cent would equal one eighty-three and one-third of \$180, or \$2.16; 100 per cent would equal 100 times \$2.16, or \$216.

Q. A house and lot were sold for \$7,762.50, at a gain of 15 per cent. What was the cost? What is the first step in working this problem?—Ethel. 100 per cent of the cost of the house and lot plus 15 per cent gain is 115 per cent of the cost, or \$7,762.50.

Q. What is the next step?

Ernest Z. The cost would be as many times \$1 as 115 per cent is contained times in \$7,762.50.

(Seven pupils did not have an answer at the expiration of 45 seconds.)

Nana. \$6,750.

Q. Explain it.—Maggie K. The cost of the house and lot is 100 per cent, and if he gained 100 per cent—

Teacher. I do not agree with you.—Leslie. 100 per cent, or the cost, plus 15 per cent, the gain, is 115 per cent of the cost, or \$7,762.50; and the cost would be as many times \$1 as 115 per cent is contained times in \$7,762.50, or 6,750 times, or \$6,750.

Teacher. Correct his mistake.—Hugh. The cost would be as many times \$1 as 1.15 is contained times in \$7,762.50, or 6,750 times, or \$6,750.

Q. In percentage what would you call that \$6,750?—Ernest B. The base.

Q. What would you call that \$7,762.50?—Maggie S. The amount.

Q. A man sold two horses for \$150 each; on one he gained 25 per cent, and on the other he lost 25 per cent. Did he gain or lose by the transaction, and how much? What do we first do in this problem?—Daisy. Find the cost of the first horse.

Q. What next?—Julia. Find the cost of the second horse.

Q. And then what?—Ethel. Find the gain or loss on each.

Q. What else could you do rather than that?—Fred. Add the costs and selling prices, and subtract. (One-half of the pupils had the problem solved in one minute; all had finished in $1\frac{1}{2}$ minutes.)

Q. What was the question?

May. Did he gain or lose by the transaction, and how much?

Alfred. He lost \$20.

Hugh. He gained \$20.

Jessie. He neither gained nor lost.

Frank G. He gained \$38.50.

Q. Explain.—Florence. The cost was four-fourths. If he gained 25 per cent on one, or $\frac{1}{4}$, \$150 was the sum of $\frac{1}{4}$ and $\frac{3}{4}$, or $\frac{4}{4}$. If $\frac{1}{4}$ of the cost equal \$150, one-fourth of the cost was one fifth of \$150, or \$30, and four-fourths, or the cost, was four times \$30, or \$120, which is the cost of the horse on which he gained 25 per cent. If on the other horse he lost 25 per cent, or one-fourth of the cost, then the

difference between four-fourths of the cost and one-fourth of the cost is three-fourths of the cost, or \$150. If \$150 is three-fourths of the cost, one-fourth of the cost is one-third of \$150, which is \$50. Four-fourths, or the cost, would be four times \$50, which are \$200. If the second horse cost him \$200, and the other horse cost him \$120, the entire cost is the sum of \$120 and \$200, which is \$320. The entire selling prices of the two horses is the sum of \$150 and \$150, which is \$300. He would lose the difference between \$320 and \$300, which is \$20.

(Nine pupils had wrong answers.)

Q. An agent furnished a schoolhouse for \$45, and received \$5.40 commission. What was the rate of commission? What is the first step in the problem?—Una. Find the rate.

Q. In percentage what would the \$15 be called?—Una. It would be the base.

Q. What would the \$5.40 be?—Saul. It would be the percentage.

Q. What would be required to find?

Class. The rate.

(Every pupil had an answer in one minute; two pupils had wrong answers.)

Willie. \$1.80.

Q. What pupil will tell me why Willie can not be right?

Ernst Z. Because the answer is to be the rate per cent, and he gave his answer in dollars.

Fred. 12 per cent.

Alfred. 10 per cent.

Teacher. 12 per cent is correct.

Q. An agent received 5 per cent for buying wool, and his commission was \$208.50; how much wool did he buy? What do we want to find in this problem?—Ethel. How much wool he bought.

Q. What would that be in percentage?—Ethel. Base.

Q. What would be the rate in this problem?—Frank G. The 5 per cent.

Q. What would you call the \$208.50?—Mary. Percentage.

Q. How do we always find the base when we have the rate and percentage given?

Olga. Divide the percentage by the rate to find the base.

Ernst Z. He bought \$4,170 worth of wool. If he received 5 per cent commission for buying wool, and received \$208.50, he would buy as many dollars' worth of wool as 5 cents are contained times in \$208.50, which are 4,170 times or \$4,170.

Q. A Boston merchant sent his broker in Cincinnati \$3,529.20 to be invested in bacon, after deducting his commission of 2 per cent. How much bacon did he buy? What do we first want to find?—

Alfred. We want to find how much money he invested in bacon.

Q. What is the first step?—Tom. Add 100 per cent and 2 per cent.

Q. Why?

Tom. Because every dollar's worth of bacon the broker bought would cost the merchant \$1.02—one dollar and the 2 cents commission, which makes \$1.02.

Ernst. For every dollar's worth of bacon the broker buys he received two cents for commission, and altogether, the one dollar for the bacon and his commission would be \$1.02, and the entire bill would be the sum of what he received for bacon and his commission, or \$3,529.20.

Julia. If one dollar's worth of bacon cost \$1.02, for \$3,529.20 he could buy as many dollars' worth of bacon as \$1.02 is contained times in \$3,529.20, which are 3,460 times, or \$3,460.

(Six pupils did not have an answer at the expiration of one minute.)

Q. What was the man's commission?—Florence. \$60.20.

Assistant Superintendent. I have a watch charm here. A friend of mine gave it to me. It cost my friend \$10. If I should sell this watch charm for \$12, what would be my gain per cent?—Ernst. You did not gain any per cent.

Q. Why do you think I did not gain any per cent?—Tom. You did not gain any per cent because you did not buy it.

Q. What has that to do with it? Somebody bought it. If I sold it, is that not all that is necessary?—Maurice. It did not cost you anything so you are just that much ahead.

Q. Why can you not get a rate per cent on that?—Maurice. You did not buy it, so you could not gain any per cent.

Q. What is the base in this problem?—Frank. There is no base.

Q. Can you have a gain per cent when there is no base?

Frank. No, sir.

Ernst. The base is your friend's action in giving it to you, and if you did not have any money in your pocket, you are just that much ahead.

WEBSTER SCHOOL—MRS. WHITELEY, TEACHER.

[April 2, 1895—Class A, grade seventh.]

SUBJECT: *Case forms of nouns and pronouns.*

Q. What is the subject of the lesson?—Katie. Case forms of nouns and pronouns.

Q. What are we studying in regard to cases of nouns and pronouns?—Ada. Construction of the case forms of nouns and pronouns.

Q. What do we understand by the construction of case forms?—Ada. The arrangement of the words in regard to case.

Q. To what parts of speech has your lesson reference?—Lula. Pronouns.

Q. Why has it especial reference to pronouns?—Roy. There are no nouns given in the lesson.

Q. Why is it that in this lesson you find no nouns that are incorrectly used as regards case?—(No answer.)

Q. What parts of speech have special forms in regard to case?—Stella. Pronouns.

Q. You mean by this that only pronouns have special forms for cases. What shall I ask you to do if I speak about giving the cases of nouns?—Anna. Give the declension.

Q. You may decline any noun you wish.—Kitty. Singular: Nominative, man; possessive, man's; objective, man. Plural: Nominative, men; possessive, men's; objective, men.

Q. Do we find three different forms for the three cases?—Eva. We find only two forms.

Q. Where do we find these two different forms?—Ray. The nominative and objective are alike, and the possessive is different.

Q. Nouns being alike in the nominative and objective, and different in the possessive, let us see how it is with pronouns. Decline I.—Eva. Singular: Nominative, I; possessive, my or mine; objective, me. Plural: Nominative, we; possessive, our or ours; objective, us.

Q. How many forms do we find for the different cases?—Lula. Three different forms.

Q. Decline another pronoun that has three different forms for the cases.—Nellie. Singular: Nominative, he; possessive, his; objective, him. Plural: Nominative, they; possessive, their or theirs; objective, them.

Q. Do we not know that pronouns change in form for the cases, and that nouns do not? Our lesson has special reference to what part of speech?—George. To pronouns.

Q. To what modification of pronouns?—George. Case.

Q. What is the caution in to-day's lesson?—Ada. The pronouns, *I, we, thou, ye, he, she, they*, and who are *nominative* forms, and must not be used in the *objective*. *Me, us, thee, him, her, them*, and whom are *objective* forms, and must not be used in the *nominative*.

Q. What do the sentences given you illustrate?—Wallace. They illustrate errors in use of case. These sentences in our lesson are not correct.

(Pupils repeat the incorrect sentences, then correct them, and state the reasons.)

Anna. It is not me you are in love with. Correct: It is not I you are in love with. *I* is the attribute complement, and should be in the nominative case.

Tom. He was neither better bred nor wiser than you or me. Correct: He was neither better bred nor wiser than you or I. The nominative *I* should be used instead of the objective *me*, because it is the subject of the verb understood.

Q. Why did you not change the case of the word *you*?—Tom. Because in form, it may be either the nominative or objective.

Q. Where do we make our errors in the use of case?—Wallace. In using the *nominative* for the *objective*, and the *objective* for the *nominative*.

Q. In which case do we not make this kind of mistake?—Wallace. In the possessive.

Q. What error do we generally make in the use of the possessive?

Stella. An error in spelling.

Anna. Who will go? Me. Correct: Who will go? I. The nominative *I* should be used instead of the objective *me*, because it is the subject of the verb *will go*, understood.

Daisy. Him being a stranger, they easily misled him. Correct: He being a stranger, they easily misled him. The objective *him* should not be used for the nominative *he*, because it is used independently with the participle.

Q. Now, you may think of what you have done, and recall the instances in which we need to use the nominative case.

Jessie. We need to use the nominative case when the word is used as the subject, as the attribute complement, and when it is used independently.

Ray. And when it is used as explanatory modifier.

Q. This, so far, has not been shown. Give an illustration of a pronoun used as explanatory modifier, selecting from the list of sentences in this lesson.—Carrie. It was Joseph, he whom Pharaoh promoted.

Q. In what case is the word *he*?—Maggie. In the nominative case.

Q. Why is it in the nominative case?—Osmar. Because the word it explains is in the nominative case.

Q. Are all explanatory modifiers in the nominative case?—Wallace. No'm; the explanatory modifier is always in the same case as the word it explains.

Q. In what other instance do we need the nominative case besides those mentioned?—(No answer.)

Assignment of lesson. Now, in preparation for to-morrow's lesson, you may select from this list of sentences all those in which the error of using the objective for the nominative has been made, and correct all such errors, being very careful to think of the reason for such corrections. You will then be able to answer my last question.

LATHROP SCHOOL—MISS DENNY, TEACHER.

[April 3, 1895—Class A, grade seventh.]

Q. What is voice?—Albert. Voice is that *modification of a transitive verb* which shows whether the subject names the actor, or the thing acted upon.

Q. You may give me a sentence in which the verb is in the active voice.

George. The soldiers called Thomas the Rock of Chickamauga.

Arthur. The people of the United States called Abraham Lincoln "Honest Abe."

Q. Name the principal parts of that sentence.—George. *People* is the subject, *called* is the predicate, *Abraham Lincoln* is the object complement, "*Honest Abe*" is the objective complement.

Q. Change the sentence so that the verb will be in the passive voice?—Marion. Abraham Lincoln was called "Honest Abe" by the people of the United States.

Q. What changes did you make in the sentence?—Marion. The verb in the active voice *called* was changed to *was called* in the passive voice. The subject of the verb in the active voice was changed to the name of the agent in the passive. The object complement *Abraham Lincoln* was changed to the subject in the passive, and the objective complement "*Honest Abe*" became the attribute complement in the passive voice.

Q. What is the subject of that sentence in the active voice?—Arthur. *People* is the subject.

Q. What kind of verb may have voice?—Dora. *Transitive* verbs may have voice.

Q. You may give me a definition of *mode*?—Mary. *Mode* is that modification of a verb which determines the manner of asserting the action or being.

Q. What is the indicative mode?—Sophia. The indicative mode asserts the action or being as a fact.

Q. What is the potential mode?—Frank. The potential mode asserts the power, liberty, possibility, or necessity of the action or being.

Q. Give a sentence in which the verb is in the indicative mode?—Sophia. The late rebellion in the United States lasted four years. *Lasted* is in the indicative mood, because it asserts the action as being a fact.

Q. In what tense is that verb?—Harry. That verb is in the past tense.

Q. Give me a sentence in which the verb is in the active voice, potential mode, present tense.—Andrew. The Republicans may defeat the Democrats.

Q. What is the verb in that sentence?—Florence. *May defeat* is the verb.

Q. How do you know it has voice?—Ada. Because it has an object to complete its meaning.

Q. That is correct; but, who will state the fact in a different way?—Albert. The verb is a transitive verb, and transitive verbs always have voice.

Q. How do you know that it is a transitive verb?—Mary. It is a transitive verb because it requires an object to complete its meaning.

Q. How do you know that it is in the potential mode?—George. Because the action is asserted as being a possibility.

Q. How do you know it is in the present tense?—Arthur. Because it has the auxiliary of the present tense.

Q. What is the auxiliary?—Arthur. *May*.

Q. In the sentence on the board what is the voice of the verb? [The people of the United States called Abraham Lincoln "Honest Abe."]—Helen. The verb is in the active voice.

Q. How do you know that the verb is in the active voice?—Julia. The verb is in the active voice because the subject names the actor.

Q. You may give me the form of the sentence in the passive voice, and I will write it on the board.—Abraham Lincoln was called "Honest Abe" by the people of the United States.

Q. Have we a transitive or an intransitive verb?

Auna. An intransitive verb.

Ruth. A transitive verb in the passive voice.

Q. Why is it a transitive verb?—Ruth. It is a transitive verb because it requires an object to complete its meaning.

Q. What is the object of the verb in the first sentence?—Harry. Abraham Lincoln.

Q. What is peculiar about the passive voice?—Sophia. The object of the sentence in the active voice is the subject of the verb in the passive.

Q. You may give me the voice, mode, tense, person, and number of every verb I give you. *I will walk*.

Frank. Indicative mode, future tense, first person, singular number.

Andrew. The sentence should be, *I shall walk*.

Q. Why?—Harry. Because the auxiliary *will* is a sign of the second and third persons; *shall* is used with the first person in the future tense.

Q. I shall walk.—Florence. Active voice, indicative mode, future tense, first person, singular number.

Q. You may walk.—Julia. Active voice, potential mode, present tense, second person, singular or plural number.

Q. What determines the tense in the potential mode?—Arthur. The auxiliary.

Q. What is the auxiliary in the verb I gave you?—Sophia. *May*.

Q. It is a sign of what tense?—Edna. It is a sign of the present tense.

Q. They might be killed.—Arthur. Potential mode, past tense, third person, plural number, passive voice.

Q. Why is it passive voice?—Arthur. Because the subject names that which is acted upon.

Q. You might have been killed.—Marion. Passive voice, potential mode, past perfect tense, singular or plural number.

Q. I shall have talked.—Florence. Active voice, indicative mode, future perfect tense, first person, singular number.

Q. You will have been killed.—Sophia. Passive voice, indicative mode, future perfect tense, second person, singular or plural number.

Q. Is it correct to say you *will* have been killed?—Class. Yes'm.

Q. Why?—Frank. Because *will* is the sign of futurity in the second and third persons.

Q. You might die.

Andrew. Passive voice, potential mode, past tense, second person, singular or plural number.

George. It has no voice.

Q. Why has it no voice?—George. Because it is an intransitive verb.

WOODLAND SCHOOL—MISS TOWNSEND, TEACHER.

[April 4, 1895—Class B, grade seventh.]

DEPENDENT CLAUSES.

Q. What is a dependent clause?—Mamie. A dependent clause is a clause which depends upon another clause for its meaning.

Q. What three classes of dependent clauses?—Margie. The adjective, adverb, and substantive.

Q. What is an adjective clause?—Allen. An adjective clause is one that performs the office of an adjective.

Q. What is an adverb clause?—Josie. An adverb clause is one that performs the office of an adverb.

Q. What is a substantive clause?—Jennie. A substantive clause is one that performs the office of a noun.

Q. This class of adjective clauses is introduced by a certain part of speech. What is it?—Amy. A relative pronoun.

Q. Give me two relative pronouns.—Charles. *Who* and *which*.

Q. Yes; we will use those. Think of the map of Europe, and be ready with something you know about Europe that will illustrate a sentence containing an adjective clause.—Aileen. Brussels, which is noted for its lace and carpet manufactures, was the place where Wellington and his army were quartered the night before Waterloo.

Q. What is the adjective clause?—Aileen. *Which is noted for its lace and carpet manufactures* is the adjective clause introduced by the relative pronoun *which*, the antecedent of which is *Brussels*.

Effie. The Norwegians and Swedes, who are noted for their intelligence and industry, have public schools in all parts of the country. The adjective clause is introduced by *who*, the clause is, *who are noted for their intelligence and industry*. The relative pronoun has two antecedents, *Norwegians* and *Swedes*.

Latimer. St. Petersburg, which was founded by Peter the Great, is the capital of Russia. The adjective clause, *which was founded by Peter the Great*, is introduced by the relative pronoun *which*. Its antecedent is *St. Petersburg*.

Juanita. London, which is noted for its fogs, is the capital of England, and is the largest city in the world. *Which is noted for its fogs* is the adjective clause.

Howard. Genoa, which is the birthplace of Columbus, is in Italy. *Which is the birthplace of Columbus* is the adjective clause, introduced by the relative pronoun *which*.

Q. What are the most common words that introduce an adverb clause?—Roy. *While*, *when*, *where*.

Q. What kind of an adverb do you call them; something else besides an adverb? What other part of speech are they like?—Rosa. Conjunction and adverb.

Q. What would you call them, then?—Rosa. Conjunctive adverbs.

Q. Think about the map of Europe, and make a sentence which contains an adverb clause introduced by *when*.—Harry. The Russians, when they discovered they could not hold Moscow, destroyed it. *When they discovered* is the first dependent clause, introduced by the conjunctive adverb *when*.

Q. How many kinds of clauses in this sentence?—Harry. Two kinds—a noun clause, or substantive, and an adverb clause.

Q. What is the substantive clause?

Harry. *They could not hold Moscow*, with the word *that* understood.

Margie. Queen Isabella was in Palos when Columbus set sail for America. *When Columbus set sail for America* is the dependent clause, introduced by the conjunctive adverb *when*.

Birdie. While we were in Russia the Czar was assassinated. *While we were in Russia* is the adverb clause, introduced by the conjunctive adverb *while*.

Q. What does it tell?

Josie. It tells the time when the Czar was assassinated.

Agnes. When we were in Norway we saw the midnight sun. *When we were in Norway* is the dependent clause, introduced by the conjunctive adverb *when*, and tells when we saw the midnight sun.

Q. Why is it an adverb?—**Lewis.** Because it modifies a verb.

Q. What part of speech do adverbs modify?—**Violet.** Adverbs modify verbs, adjectives, and other adverbs.

Q. Give me a sentence containing an adverb clause introduced by *where*.—**Rosa.** We were at Brussels where carpets are made.

Q. What does your clause modify?—**Rosa.** Modifies the verb *were*.

Q. Using the same sentence, put the word *place* in.—**Roy.** We were at the place where the carpets are made.

Q. What is the clause now?—**Aileen.** It is an adjective clause modifying a noun.

Q. What is the difference between the two sentences?—**Aileen.** In one the clause modifies the verb, and in the other the clause modifies the noun *place*.

Q. What is the meaning of the word *substantive*?—**Joe.** In the place of.

Q. What is a substantive clause?—**Clement.** A substantive clause is one that performs the office of a noun.

Q. Nouns may be several things in a sentence. Tell me one thing a noun may be.—**Agnes.** A noun may be the subject of a sentence.

Q. Something else a noun may be.—**Allie.** A noun may be the object of a sentence.

Q. A noun may be the subject or object of a sentence, so a substantive clause may be the same. Give me a sentence containing a substantive clause and tell what part of the sentence it is.

Joe. That England is the best-governed country in Europe is a fact. *That England is the best-governed country in Europe* is the substantive clause used as the subject, because it tells what is a fact.

Ward. That Napoleon was born on the Island of Corsica is stated in history. *That Napoleon was born on the Island of Corsica* is the substantive clause used as the subject, because it tells what is stated in history.

Amy. We know that some of the American poets are buried in Westminster Abbey. The substantive clause *that some of the American poets are buried in Westminster Abbey* tells what we know; therefore, it is the object complement.

Clement. That the religion of Turkey is Mohammedanism is stated in the geography. *That the religion of Turkey is Mohammedanism* is the substantive clause used as the subject.

(Many sentences were given to illustrate the different uses of the different clauses.)

Frank. While we were in France we purchased some fine pictures. The adverb clause, *while we were in France*, is introduced by the conjunctive adverb *while*.

Résumé. Q. What is the subject of the lesson?—**Mae.** Dependent clauses.

Q. What is the particular aim of this kind of a lesson?—**Ward.** To show that we can connect grammar and geography in the same lesson.

Q. In what way did we show that?—**Aileen.** By giving sentences containing dependent clauses based on the map of Europe.

Q. Name the three classes of dependent clauses.—**Violet.** Adjective, adverb, and substantive.

Q. What is an adjective clause?—**Amy.** An adjective clause is one that performs the office of an adjective.

Q. What words introduce adjective clauses?—**Florence.** *Who, which, that.*

Q. What is an adverb clause?—**Joe.** An adverb clause is one that performs the office of an adverb.

Q. Adverb clauses are introduced by what words?—**Aileen.** *Where, when, while*, usually.

Q. What is a substantive clause?—**Joe.** A substantive clause performs the office of a noun, and is used usually as the subject or as the object complement.

BRYANT SCHOOL—MISS FLAVEN, TEACHER.

[April 2, 1895—Class B, grade seventh.]

Assistant Superintendent. Miss Flaven, will you take your class for a few minutes to show how you teach that a word may be used in several different ways, and in those different ways be a different part of speech?—**Miss Flaven.** Shall I take the word *but*?

Assistant Superintendent. Yes; that will do.

Q. Who will tell me what a *conjunction* is?—**Edith.** A *conjunction* is a word that is used to connect words, phrases, or clauses.

Q. What are the classes of conjunctions?—**Helen.** *Coordinate* and *subordinate* conjunctions.

Q. What is a coordinate conjunction?—**Stella.** A coordinate conjunction is one that connects words, phrases, or clauses of the same rank.

Q. What is a subordinate conjunction?—Cora. A subordinate conjunction is one that connects clauses of different rank.

Q. A coordinate conjunction has how many different offices to perform?—Ella. A coordinate conjunction has one office to perform—that of connecting.

Q. Subordinate conjunctions have how many offices to perform in some cases?—Ralph. They have two offices to perform.

Q. What are they?—Maud. Those of connective and modifier.

Q. If I use a conjunctive adverb, it has how many offices to perform?—Class. Two.

Q. A relative pronoun has how many offices to perform?—Class. Two.

Q. In the case of coordinate conjunctions, there are how many subdivisions?—Class. Three: Copulative, adversative (but, whereas), alternative.

Q. Give me two adversative conjunctions?—Class. *But* and *whereas*.

Q. We want to deal with one of these, that is the word *but*. [Sentences written on the board.] I go *but* you remain. What is *but* in that sentence?—Edith. *But* is a coordinate conjunction.

Q. Not a sparrow falls *but* God wills it. What is *but* there?

Pearl. It is a preposition.

Edna. It is a subordinate conjunction.

Q. Why?—Edna. Because it connects clauses of different rank.

Q. Which is the dependent clause?—Helen. *God wills it*, modifying the whole sentence through the predicate, *but* being equivalent to unless.

Q. He was all *but* dead. What is *but* in this sentence?—Stella. It is a preposition.

Q. When it is used as a preposition, what other word does it equal?—Helen. *Except* or *save*.

Q. In this sentence what word depends upon it?—Class. The word *dead*.

Q. If it is a preposition, what is its office?—Emma. It introduces a phrase modified, and shows the relation in sense between the principal word *dead* and the word it modifies *all*.

Q. If it is a preposition, what word does it govern?—Zennie. It governs the word *dead*.

Q. No man is so wicked *but* he loves good?—Lola. *But* is a conjunctive adverb.

Q. As a conjunction in that case, what does it connect?—Maud. It connects the two clauses through the word *so*.

Q. As an adverb, what does it modify?—Ralph. It modifies *so*.

Q. Performing both of these offices, what part of speech do we call it?—Class. *Conjunctive adverb*.

Q. We meet *but* to part. What is *but* here?—Edith. An adverb.

Q. If it is an adverb, what other word does it equal?—Class. *Only*.

Q. What does it modify?—Ralph. It modifies *to part*.

Q. Life is *but* a dream. What is the word *but* in this sentence?—Ethel. An adjective.

Q. As an adjective, what word does it modify?—Ethel. It modifies the word *dream*.

Q. All *but* him had fled. What is *but* here?—Edna. A preposition.

Q. Introducing what word?—Edna. Introducing the word *him*.

Q. Modifying what word?—Class. *All*.

Q. To what is it equivalent in that sense?—Helen. It is equivalent to the word *save*, or *except*.

Q. Which is better?—Edith. *Save*.

Q. I have *but* one dollar. What is *but* in this sentence?—Maud. An adverb.

Q. Modifying what word in the sentence?—Ethel. Modifying *one*.

Q. Tell me how many ways we have used that one word—that is, as how many parts of speech?—Class. In six ways, as four parts of speech.

Q. Who can give me the several ways in which we have used the word *but*? I will write them on the board as you give them:

But =	{	Coordinate conjunction.	} Connective.
		Subordinate conjunction.	
		Conjunctive adverb.	
		Preposition.	
		Adjective.	
		Adverb.	

Q. As quickly as you can, I wish you would compose sentences using *but* as a subordinate conjunction.

Ethel. Not a drop of blood was shed *but* New England felt the loss of it.

Ralph. Not a ball was made *but* old England knew it.

Stella. Not a colony in the New World was settled, *but* it was accompanied by some suffering.

Emma. Not a wrong deed was done *but* his mother knew it.

Q. Give sentences using the word *but* as a conjunctive adverb.

Jessie. No one is so desolate *but* he has some friend.

Jennie. No one is so old *but* he can learn.

Ethel. There is not so much wrong *but* it can be righted.

Q. Give the sentences using the word *but* as a preposition.

Julia. The books were all *but* lost.

Edith. He was all *but* bad.

Ralph. This day is anything *but* gloomy.

Q. Use the word *but* in sentences as an adverb.—Emma. We go *but* to stay.

Q. What does it modify in that sentence?

Emma. It modifies the phrase *to stay*.

Zennie. We saw *but* to be disappointed.

Edith. I see *but* one man.

Q. Modifying what word?

Edith. Modifying the word *one*.

Ethel. We are born *but* to die.

Q. Give sentences using the word *but* as an adjective.

Zennie. Life is *but* a dream.

Edith. This is *but* an apple.

Zennie. The body is *but* a house for the soul.

Ethel. Beauty is *but* an outside showing.

Q. How is the word *but* used in this sentence: There is no one here *but* me!—Maud. It is used as a preposition.

Q. He is *but* a boy!—Pearl. As an adjective.

Q. All *but* him had fled!—Ethel. It is used as a preposition.

Q. Then, in how many ways is the word *but* used?—Class. In six ways.

BRYANT SCHOOL—MISS BATCHELDER, TEACHER.

[April 2, 1895—Class A, grade sixth.]

SENTENCES WRITTEN ON THE BOARD.

1. I had read of the soothing companionship of the forest, of the pleasure of the pathless woods, but I thought, as I stumbled along in the dismal actuality, that if ever I got out of it I would write a letter to the newspaper exposing the whole thing.

2. I tried to think what is the best way to kill a bear when you are not near enough to club him with the stick.

Q. How many kinds of clauses are there in the two sentences?—Willie. There are two kinds of clauses.

Q. What are they?—Willie. *Dependent* and *independent*.

Q. What is the first independent clause in the first sentence?—Jim. *I had read of the soothing companionship of the forest, of the pleasure of the pathless woods.*

Q. What is the first dependent clause in the first sentence?—Cora. *As I stumbled along in the dismal actuality.*

Q. To what class of dependent clauses does it belong?—Willie. It is an adverb clause.

Q. To what class of adverb clauses does it belong?—Ella. It is an adverb clause of time.

Q. It refers to what action?—Cora. Refers to *thinking*.

Q. What is the verb that it modifies?—Ella. *Thought*.

Q. Give the analysis of the first independent clause.—Rosa. *I* is the subject; *had read* is the predicate, modified by the phrases of the *soothing companionship of the forest*, and of the *pleasure of the pathless woods*; *of* is the introductory word; *companionship* is the principal word, modified by the adjectives *the* and *soothing*; and the phrase of the *forest*, *of* is the introductory word, *forest* is the principal word modified by *the*; *of the pleasure of the pathless woods*, *of* is the introductory word, *pleasure* is the principal word modified by *the*; and the phrase of the *pathless woods*, *of* is the introductory word, *woods* is the principal word, modified by the adjective *pathless*.

Q. What is the unmodified part of the second independent clause?—Julia. *I thought*.

Q. What is the object complement of thought?—Esther. The *noun clause* is its object complement.

Q. What is the subject of the noun clause?—Fred. *I* is the subject.

Q. What is the use of the word *that*?—Ben. The word *that* introduces the clause.

Q. What is the use of the dependent clause, *if I ever got out of it*?—Julia. It tells when he will write to the newspaper.

Q. Is it, then, a clause of time?—Nellie. It is a clause of condition.

Teacher. In one way it tells the time. It tells the *condition* by which he would write the letter.

Q. What is the *participial* phrase in the sentence?—Trigg. *Exposing the whole thing*.

Q. What is the use of the participial phrase?

Sabina. Its use is to modify *would write*.

Grace. Its use is to modify *letter*.

Q. How also might we understand it?—Cora. As an objective complement.

Q. Taking it in its simpler meaning, modifying *letter*, analyze the whole of the second clause.—Nellie. *I* is the subject, *thought* is the predicate, *that I would write a letter to the newspaper exposing the whole thing* is a noun clause used as the object complement, introduced by *that*, of which *I* is the subject; *would write* is the predicate, modified by the phrase *to the newspaper*; *to* is the introductory word, *newspaper* is the principal word, modified by *the*; *letter* is the object complement modified by *a*

and the participial phrase *exposing the whole thing*, of which *thing* is the object complement of *exposing*, modified by *the* and *whole*. The clause, *as I stumbled along in the dismal actuality* modifies *thought*; *I* is the subject, *stumbled* is the predicate, modified by *along* and the phrase *in the dismal actuality*, of which *in* is the introductory word, *actuality* is the principal word modified by *the* and *dismal*; *as* connects the clause with *thought*. *If I ever got out of it* is an adverb clause modifying *thought*, of which *I* is the subject, *got* is the predicate modified by *ever*, *out* and the phrase *of it*; *of* is the introductory word, and *it* is the principal word; *if* connects the clause with *thought*.

Q. How many see an *infinitive phrase* in the second sentence? What is its use?—Ella. It is used as an *object complement*.

Q. Of what is it the object complement?—Jim. It is the object complement of *tried*.

Q. What is the infinitive phrase?—Willie. *To think what is the best way to kill a bear with a gun when you are not near enough to club him with the stock*.

Q. What is the verb in that infinitive phrase?—Willie. *Think* is the verb.

Q. Why is it necessary to give all the rest of the sentence as part of the infinitive phrase?—Willie. Because the rest of the sentence modifies it.

Q. In what way does it modify the phrase?—Eva. As an *object complement*.

Q. What is the adverb clause in that sentence?—Trig. *When you are not near enough to club him with the stock*.

Q. To what does that clause belong?—Jim. It modifies *kill*.

Q. What part of speech is *when*?—Ella. It is an *adverb*.

Q. What kind of an adverb?—Julia. It is a *conjunctive adverb*.

Q. Why is it a conjunctive adverb?—Cora. Because its office is to *connect*, and also *modify* the verb.

Q. To what class of adverb clauses does it belong?—Fred. To clauses of *time*.

Q. What is the use of the word *enough*?—Esther. It is used as an *attribute complement* of *are*.

Q. What is the use of the other infinitive phrase?—Willie. It is used to modify the word *enough*.

Q. Analyze that infinitive phrase.—Trig. *To club him with the stock* is an infinitive phrase modifying *enough*, of which *to* is the introductory word, *club* is the principal word modified by the phrase *with the stock*, of which *with* is the introductory word, *stock* is the principal word, modified by *the*; *him* is the object complement of *club*.

IRVING SCHOOL—MISS GRIFFITH, TEACHER.

[April 4, 1895—Class A, grade sixth.]

SUBJECT: *Compound sentences, bringing out the idea of independent clauses without the conjunctions being expressed.*

Sentence: The camel is the ship of the ocean of sand; the reindeer is the camel of the desert of snow.

Grace. This is a compound sentence, because it contains two independent clauses. *The camel is the ship of the ocean of sand* is the first independent clause. *The reindeer is the camel of the desert of snow* is the second independent clause.

Mamie. *Camel* is the subject of the first independent clause, *is the ship of the ocean of sand* is the entire predicate, *is* is the verb, *ship* is the attribute complement, *of the ocean* is a phrase modifying *ship*, *of sand* is a phrase modifying *ocean*.

Jennie. *Reindeer* is the subject of the second independent clause, *is the camel of the desert snow* is the entire predicate, *is* is the verb, *camel* is the attribute complement, *of the desert* is a phrase modifying *camel*, *of snow* is a phrase modifying *desert*.

Mary. In diagramming, the two clauses are connected with a dotted line, and the conjunction is not expressed.

Sentence: Of thy unspoken word thou art master, thy spoken word is master of thee.

Fannie. This is a compound sentence, because it contains two independent clauses. *Of thy unspoken word thou art master* is the first independent clause, *thy spoken word is master of thee* is the second independent clause.

Minnie. *Thou* is the subject of the first independent clause, *art master of thy unspoken word* is the entire predicate, *art* is the verb, *master* is the attribute complement, *of thy unspoken word* is a prepositional phrase modifying *master*.

Rebecca. *Thy spoken word is master of thee* is the second independent clause, of which *word* is the subject, *is master of thee* is the entire predicate, *is* is the verb, *master* is the attribute complement, *of thee* is a prepositional phrase modifying *master*. *Thy* and *spoken* are modifiers of the subject, *word*.

Mary. In diagramming the clauses are connected by a dotted line, and the conjunction is represented by an *x*.

Sentence. The ship leaps, as it were, from billow to billow.

Nellie. This is a compound sentence, because it contains two independent clauses. *The ship leaps from billow to billow* is the first independent clause. *As it were* is the second independent clause. *Ship* is the subject of the first independent clause; *leaps from billow to billow* is the entire predicate; *leaps* is the verb, *from billow* is a prepositional phrase modifying *leaps*, *to billow* is a prepositional phrase modifying *billow*.

Holly. *As it were* is the second independent clause, entirely independent of the first clause. *It* is the subject, *were* the verb, *as* introduces the clause.

Sentence. Religion, who can doubt it, is the noblest of themes for the exercise of the intellect.

Mattie. This is a compound sentence, because it contains two independent clauses. *Religion is the noblest of themes for the exercise of the intellect* is the first independent clause. *Who can doubt it* is the second independent clause. *Religion* is the subject of the first independent clause, *is the noblest of themes for the exercise of the intellect* is the entire predicate; *is* is the verb, *theme* is the attribute complement understood, *the* and *noblest* are adjective modifiers of *theme*; *of themes* is a prepositional phrase modifying *theme*; *for the exercise* is a prepositional phrase modifying *themes*; *of the intellect* is a prepositional phrase modifying *exercise*, *the* modifies *intellect*.

Nellie. *Who can doubt it* is the second independent clause entirely independent of the first independent clause. *Who* is the subject, *can doubt it* is the entire predicate; *can doubt* is the verb, and *it* is the object complement.

Sentence: What graves (these are the words of Wellesley, speaking of the two Pitts) contain such a father and such a son!

Mattie. This is a compound sentence because it contains two independent clauses. *What graves contain such a father and such a son* is the first independent clause. *These are the words of Wellesley, speaking of the two Pitts* is the second independent clause.

Bessie. *Graves* is the subject of the first independent clause; *contain such a father and such a son* is the entire predicate; *contain* is the verb, *father and son* is the compound attribute complement; *such and a* modify *father*, and *such and a* modify *son*; and *is* is a conjunction connecting *father* and *son*.

Herman. *These are the words of Wellesley, speaking of the two Pitts*, is the second independent clause; *these* is the subject; *are the words of Wellesley, speaking of the two Pitts* is the entire predicate; *are* is the verb; *words* is the attribute complement; *of Wellesley* is a prepositional phrase modifying *words*; *speaking* is a participial phrase modifying *Wellesley*; *of the two Pitts* is a prepositional phrase modifying *speaking*.

Q. What do you need for that sentence to make it complete?

Will. The second independent clause is entirely independent of the first independent clause.

John. *Father and son* are not attribute complements of *contain*.

Q. What do we mean by the *grave containing anything*?—John. Holding it.

Q. When we hold anything, does it receive the act?—Herman. Yes.

Q. Then, that which receives the act is what?—Herman. The object complement.

WEBSTER SCHOOL.—MISS BLACKBURN, TEACHER.

[April 2, 1895—(Class B, grade sixth.)]

Assistant Superintendent. Please give us a lesson in which you show how you teach the pupils to distinguish between the *object* and *attribute* complements, between the *object* and the *objective* complements, and between *objective* and *attribute* complements.

Q. What is *complement*?—Olive. Whatever fills out or completes is a *complement*.

Q. How many kinds of complements are there?—Lillie. There are three kinds of complements.

Q. Name them.—Lillie. *Attribute, object, and objective* complements.

Q. What is an object complement?—Claude. An *object complement* completes the predicate, and names that which receives the act.

Q. What parts of speech may an object complement be?—Lucy. A *noun, pronoun, or anything* used for a noun or pronoun.

Q. Give me a sentence containing an object complement.—Pleny. The Amazon River drains a larger extent of country than any other river on the globe.

Q. What is the object complement in that sentence?—Pleny. *Extent*.

Q. An object complement answers what question?—Olive. Answers the question *what* or *whom*.

Q. When the object complement answers the question *whom*, it represents what?—Mary. When the object complement answers the question *whom*, it represents the name of a person.

Q. When the object complement answers the question *what*, what does it represent?—Leo. When the object complement answers the question *what*, it is the name of an inanimate thing.

Q. What is an inanimate thing?—Olive. It is anything without life.

Q. What is an attribute complement?—Olfa. An *attribute complement* of a sentence completes the predicate, and belongs to the subject.

Q. An attribute complement is what part of speech?—Gilford. An attribute complement is a *noun, pronoun, or adjective*.

Q. When the attribute complement is a noun or pronoun, what relation does it bear to the subject?—Josie. When an attribute complement is a noun or pronoun, it means the same thing as the subject.

Q. If the attribute complement is an adjective, what relation does it bear to the subject?—Lucy. When an attribute complement is an adjective, it belongs to the subject.

Q. How does it belong to the subject?

Lucy. By modifying it.

Louise. By expressing a quality.

Lizzio. By describing it.

Q. Give me a sentence containing an attribute complement.—Mabel. London is the largest city in the world. *London* is the subject, and *city* is the attribute complement.

Q. What is an objective complement?—Olfa. An *objective complement* completes the predicate and belongs to the object.

Q. What part of speech is an objective complement?—Claude. An *adjective, noun, or pronoun*.

Q. In this respect, the objective complement resembles what other complement?—Easia. An *attribute complement*.

Q. In what respect does the objective complement differ from the attribute complement?—Edwina. The *objective complement* belongs to the object and the *attribute complement* belongs to the subject.

Q. In what respect are all complements alike?—Nellie. All complements complete the predicate.

Q. Give me a sentence containing an objective complement.—Clara. The man painted the house white.

Q. What is the objective complement?—Clara. *White* is the objective complement, and *house* is the object complement.

Q. What part of speech is *white*?—Percy. An adjective.

Q. Give me a sentence containing an objective complement that is a noun or pronoun.—Lucy. Brazil calls her capital Rio de Janeiro. *Rio de Janeiro* is the objective complement and is the same as *capital* or the object complement.

Q. Give a sentence containing an object complement that will express a geographical fact relating to South America.

Lucy. South America contains the largest river in the world.

Mary. The Amazon River drains a larger extent of country than any other river on the globe.

Q. Give a sentence containing an attribute complement containing a thought relating to South America.

Gilford. Venezuela is called "Old Venice." *Venezuela* is the subject, *Venice* is the attribute complement, *Venezuela* and *Venice* mean the same.

Mabel. The Argentine Republic was the first country in South America to become a republic. *Argentine Republic* is the subject, *country* is the attribute complement.

Q. Give a sentence containing an objective complement.

Madge. Ecuador calls her capital Quito. *Ecuador* is the subject, *capital* is the object complement, *Quito* is the objective complement.

Josie. Magellan called Terra del Fuego the land of fire. *Terra del Fuego* is the object complement, *land of fire* is the objective complement.

LATHROP SCHOOL—MISS DICKINSON, TEACHER.

[April 3, 1895—Class A, grade fifth.]

FALSE SYNTAX.

(Sentence is read, pupil corrects and states reason.)

1. Him and me are good friends.

Jessie. He and I are good friends. The objective forms *him* and *me* should not be used for the nominative forms *he* and *I*, because they form the compound subject of the sentence.

2. The two friends were her and me.

Florence. The two friends were she and I. The objective forms *her* and *me* should not be used for the nominative forms *she* and *I*, because they form the compound attribute complement of the intransitive verb *were*.

3. Who did you see?

Willie. Whom did you see? The nominative form *who* should not be used for the objective form *whom*. *Whom* is the object complement of the transitive verb *did see*.

4. Who did you ask for?

Cecil. Whom did you ask for? The nominative form *who* should not be used for the objective form *whom*, because it is the principal word in a prepositional phrase.

Q. Transpose the sentence to show that it is the principal word of a phrase.—Nellie. You did ask for whom? *You* is the subject, *did ask* is the predicate, and *for whom* is the prepositional phrase.

5. Everybody must do their own work.

Jessie. Everybody must do his own work. The plural form *their* should not be used for the singular form *his*, because when the antecedent is preceded by *every*, it makes it singular, and a pronoun must agree with its antecedent in number.

6. I gave the horse oats, but he would not eat it.

George. I gave the horse oats, but he would not eat them. The singular pronoun *it* should not be used for the plural *them*, because its antecedent, *oats*, is plural, and the pronoun should be plural to agree with it.

7. Time and tide waits for no man.

Ollie. Time and tide wait for no man. The singular verb *waits* should not be used for the plural verb *wait*. The verb should agree in number with its compound subject, *time and tide*.

8. Each hour and each day bring their portion of duty.

Sadie. Each hour and each day brings its portion of duty. I changed the plural verb *bring* to the singular verb *brings*, because the verb should agree with its subject each *hour* and each *day* in the singular number.

Q. Why is the subject singular?—Sadie. The subject is singular because it is a compound subject preceded by *each*.

Q. Why did you change the pronoun?—Sadie. I changed the pronoun *them* to the pronoun *it* because the pronoun should agree with its antecedent in the singular number.

9. Neither Jane nor Mary are at home.

George. Neither Jane nor Mary is at home. The plural verb *are* should not be used for the singular verb *is*, because when a compound subject is preceded by *neither* or *nor*, the singular verb should be used.

10. I done what I could.

Jessie. I have done what I could; or, I did what I could. The past participle *done* should not be used without an auxiliary verb, and the past tense *did* should not be used with the auxiliary verb.

11. The boys have went home.

Julia. The boys have gone home. The past tense *went* should not be used with the auxiliary verb *have*, and the past participle *gone* should not be used without an auxiliary.

12. He throwed the ball over the fence.

Nellie. He threw the ball over the fence. There is no such word as *throwed*, because *throw* is an irregular verb.

Q. What are the principal parts of the verb *throw*?—Jessie. Present, *throw*; past, *threw*; past participle, *thrown*.

Q. What is an irregular verb?—Willie. An irregular verb is one that does not form its past tense and past participle by adding *ed* to the present.

13. Did you sloop good?

George. Did you sleep well?—The adjective *good* should not be used for the adverb *well*, because it answers the question, *How did you sleep?* and words that answer the question *how* are adverbs.

14. This is the most pleasantest day we have had.

Cecelia. This is the pleasantest day we have had; or, this is the most pleasant day we have had. The adjective *pleasant* should not be compared twice by the use of *most* and *est*.

Q. How many ways are there of comparing the adjective *pleasant*?—Cecelia. Two ways. Positive, *pleasant*; comparative, *pleasanter*; superlative, *pleasantest*; or positive *pleasant*; comparative, *more pleasant*; superlative, *most pleasant*.

15. The younger of those three boys is the smarter.

Willie. The youngest of those three boys is the smartest. The comparative forms *younger* and *smarter* should not be used for the superlative forms *youngest* and *smartest*. The superlative form is required, because there are three boys compared.

Q. Who can change that sentence so that the adjectives used would be correct?—Sadie. The younger of those two boys is the smarter.

Q. Why is that correct?—Sadie. Because when there are two boys compared the comparative degree should be used.

IRVING SCHOOL—MISS BRESNAHAN, TEACHER.

[April 4, 1895.—Class B, grade fifth.]

OUTLINE UPON THE BLACKBOARD, REVIEW LESSON.

Principal sentence parts..	Subject	{	Noun or pronoun.
			Phrase.
	Predicate	{	Clause.
			Verb.
	Complements..	{	Object.....
			{
		{	Attribute
			{

Q. What do we use to express a thought?—Lutie. To express a thought, we use a sentence.

Q. What are the essential parts of a sentence?—Will. The essential parts of a sentence are the subject and the predicate.

- Q. Why are these parts essential?—A. Willie. Because there can not be a sentence without them.
- Q. What may the subject of a sentence be?—Frank. A noun, pronoun, phrase, or clause may be used as a subject of a sentence.
- Q. Give a sentence using a noun as the subject.—Cynthia. The boy is going away. *Boy* is a noun and is the subject of the sentence.
- Q. Use a pronoun as the subject of the sentence.—Belle. I am going home. *I* is the subject.
- Q. Give a sentence using a phrase as the subject.—Fannie. To live is not all of life. *To live* is the subject.
- Q. Use a clause as the subject.—Edna. That he is going home is known. *That he is going home* is the subject.
- Q. Give a sentence in which the predicate is one word.—Robert. Planets *revolve*.
- Q. Give a sentence in which the predicate is two words.—Mary. The man *is dead*.
- Q. What two words make the predicate?—Mary. *Is dead*.
- Q. Let us have another illustration of the two-word predicate.—Willie. The boy will come. *Will come* is the predicate.
- Q. Give a sentence in which the predicate is composed of three words.—Maud. The boy has been sick. *Has been sick* is the predicate.
- Q. May a predicate be more than three words?—Alfred. Yes; it is very often.
- Q. Give a sentence in which the predicate contains more than three words.—Charley. The man *will have been sick*.
- Q. Name the kinds of complements.—Olive. The kinds of complements are object and attribute.
- Q. What may be used as the object complement?—Lutie. The object complement may be a noun, pronoun, phrase, or clause.
- Q. Give a sentence where the object complement is a noun.—Willie. I gave an *apple* to the boy.
- Q. Use a pronoun as the object complement.—Fannie. He hit *it*.
- Q. Use a phrase as an object complement.—Lutie. We wish *to learn*.
- Q. Use a clause as the object complement.—Cynthia. We know *that the trees are green in summer*.
- Q. What may an attribute complement of a sentence be?—Alfred. An adjective, noun, pronoun, phrase, or clause.
- Q. Give a sentence in which an adjective is an attributive complement.
Harry. The apples are *ripe*.
Mamie. Willows are *graceful*.
- Q. Use a noun as the attribute complement.—Maud. They are the *girls*.
- Q. Use a phrase as the attribute complement.—Willie. Our desire is *to study*.
- Q. What is the attribute complement?—Willie. The phrase *to study*.
- Q. Use a clause as the attribute complement.—Olive. Our hope and wish is *that you might be saved*.

IRVING SCHOOL—MISS FIELD, TEACHER.

[April 4, 1895—Class A, grade fourth.]

DICTION EXERCISE.

Teacher. I want you to listen carefully, so that you can reproduce exactly what I say. Your memory and your judgment are to be exercised. I am going to say something, and then I shall ask you to tell me exactly what I said. After that you are all to write on your slates what you tell me and what I tell you without any change. You will have to remember every word and think about the capitalization and about the punctuation. Now, are you ready? (Pupils said they were.)

I met a boy on the street to-day. He wore a fur cap. On one foot he had a shoe and on the other he wore a boot. When we met he said, "Say, do you think it will rain to-day?"

(Different pupils were called upon. They repeated the dictation with more or less accuracy until two of the class were able to give it with the correct wording. Then the children were told to write it out on their slates.)

Teacher. I will now test your powers of finding mistakes. The pupil who finds all the mistakes on his slate deserves more credit than the one who has made fewer mistakes and is unable to discover those that he has made.

Teacher. Someone may tell me the first sentence.—Clara. *I met a boy on the street to-day.*

Teacher [writes the sentences as they are given on the board]. I would like to know how to spell to-day.—Chester. To-day, *t-o* (hyphen) *d-a-y*.

Q. Is anything needed after to-day?—Frank. A period.

Q. Why should a period be placed there?—Gilford. Because a period is used at the end of every statement.

Teacher. I wish you to mark all mistakes you have. If anyone has missed the spelling of to-day I wish that one to put a zero (0) around the word. If anyone has neglected to put a period at the end of the sentence I wish that one to put a zero mark at the end of the sentence. The zero marks are to be put right where the mistakes are. Now, look at your slates, mark that sentence; make no change in it; turn slates back.

Q. What is the second sentence?—Emma. *He wore a fur cap.*

- Q. How should this sentence begin?—Elsie. With a capital letter.
- Q. How do you spell *fur*?—Bertha. *F-u-r*, fur.
- Q. What must be placed at the end of this sentence?—Mary. A period.
- Teacher. Look at the your slates, mark the mistakes, if any, then turn the slates back.
- Q. What is the next sentence?—Willie. *On one foot he had a shoe and on the other he wore a boot.*
- Teacher. Correct. How should that sentence begin?—Graham. With a capital letter.
- (Hands of all were up when the teacher finished writing the sentence.)
- Teacher. Have I written it properly?—Mary. You have written it properly, but you have omitted a period at the end of the sentence.
- Q. What is the next sentence?—Mary. *When we met he said, "Say, do you think it will rain to-day?"*
- Q. Why ought *when* to begin with a capital?—Fred. Because it is the beginning of a sentence.
- Q. What mark should follow *met*?—Edwin. A comma.
- Q. How should I begin *say*, with a capital letter or with a small letter?—Lena. With a capital letter, because it begins a quotation.
- Q. What mark should follow *say*?—Lizzie. A comma.
- Q. What mark do we need at the end of this sentence?—Edith. A question mark.
- Q. Why do you say we need a question mark?—Lena. Because it is a question.
- Q. Are any other marks needed?—Lillie. Quotation marks before *say* and after *to-day*.
- Q. Why do you inclose *Say, do you think it will rain to-day* in quotation marks?—Lula. Because they are the exact words of another.
- Teacher. You may look at your slates, mark mistakes, and put down pencils. In this lesson there are seventeen points on which some of you may have failed. You may count the number of zero marks, and take 6 from 100 for every zero mark you have.
- Q. Those that have 88 per cent or more may stand. (Sixteen out of forty-two stand.)
- Teacher. Those that have 70 per cent or more may stand. (Twenty-eight rise.)
- Teacher. Those that have less than 70 per cent stand. (Fourteen stand.)
- Teacher. You may correct your mistakes, and rewrite it. (Teacher erases the board, and pupils write the exercise again.)
- Teacher. Change slates. See how many zero marks you can honestly put on the slates. (Pupils follow directions.)
- Teacher. Change back. All who have perfect slates may stand. (Thirty stand.)
- Teacher. Those that have but one mistake this time. (Six stand.)
- Teacher. Those that have but two mistakes this time. (Six stand.)
- Teacher. Those that can correct their mistakes now may do so, and correct all mistakes made. (Then each one who had blundered the second time arose and pointed out his mistake and corrected it.)

SCARRITT SCHOOL—MISS KUBE, TEACHER.

[April 8, 1895—Class A, grade fourth.]

LESSONS IN REPRODUCTION.

Assistant Superintendent. I see here a composition by one of your pupils. Please tell me how the pupils got the facts that they have recorded?—Miss Kube. There were some visitors present last week, and I asked the children if they would write an essay if I brought them a book they had never seen. I brought in a book containing this story. Two of the books were given to the pupils, while I retained one. The children read a paragraph round about; and when one had read a paragraph he gave the book to a child directly behind him. This child, in turn, gave the book to the one back of him, until the book had gone around the class. After which the books were gathered. Some of the more difficult words, such as *Nanuk*, *Bruin*, *Metek*, *Agoonack's father*, were put on the board in response to a child's inquiry how to spell one or the other. The children had not seen the words before. The children were then asked to write an essay. There were no questions asked, excepting some help was given on the spelling.

Assistant Superintendent. Were the slates corrected before the compositions were copied?—Miss Kube. Some of them were looked over, but no important changes or corrections were made.

Teacher. During this reading lesson the children were asked first to see the country, the people or the animals around the place, to understand exactly what is said. Then they were asked, "Do you see what one little girl is doing?" or "Do you see the house the seal has made for its baby?" When we were through we asked the children to write an essay about what they remembered in the reading lesson. We think that this way of doing cultivates the habit of observation and leads the children to see the conditions of the life they read about. This is what produces the particular characteristic of this work. The two following essays are the result of the above lesson:

The story of Agoonack. (Beattie Hanes; age, 10 years.) It is very cold in the north where Agoonack and her baby brother live, and where also the bear and the seal live. The seal is very useful to the Eskimo people. They use its fat for oil for their lamps and its skin for clothes. The seal makes a very pretty house for her baby. She makes a hall through the thick ice, which is as thick as a small person is tall. This hall is for her to take food through to her little one. There is a little deer

joining the room to the hall. The walls of the room are of ice. The room is too small for the mother seal to live with her baby; but she does not need to live in a house, for she can swim about and her baby seal can not.

Agoonack is arrayed in her little hood and jumper, and is going with her father to hunt seal. They are walking along, when Agoonack's father, Metek, tells her to go behind an iceberg for he sees the house of the seal. He gives a sudden jump into the house. The little seal gives a piteous cry as Metek takes it up. The mother hears her child's cry and swims quickly to the surface. Metek knows she will come, and he is ready for her. Just as she comes to the surface he throws a spear at her and drags her out of the water. This would seem cruel to you, but Agoonack is used to it and she knows that they must have something to eat.

If Agoonack's father had known where he had left his little girl, I am sure he would not have left her there. Up a little ways in the iceberg is a little cave where Nanuk, the bear, lives with her two little cubs. The mother bear plays awhile and then they go about and enjoy themselves sliding down the hill. And they lived happily ever afterwards.

The story of Agoonack. (Harold Crane, age 10 years.) The seals have homes as well as anybody else. Near the shore are the large icebergs, and in these they make their homes. The mother seal carves the doors and rooms out very neatly. In the picture, the mother seal is swimming through the door, and the baby seal is perched on top of the door. I suppose it is too young to swim.

Agoonack, the little Eskimo girl, goes with her father, Metek. He has a long spear in his hand. He tells Agoonack to hide behind an iceberg, while he lays and watches for the very seals I have been writing about. Very soon the baby seals are spied by Metek, and he rushes forward and the spear goes into the poor little seal. Then he waits for the mother seal. He knows she will come after her little one. It seems very cruel to kill the gentle animals, but what would Agoonack do without them? The seal furnishes the Eskimo with food, clothing, and oil.

Assistant Superintendent. Now, Miss Kube, please let us see your children do some work after the plan you have outlined.

Teacher. Pupils, read from "The Seven Little Sisters Prove their Sisterhood," continuation, pages 8 to 14.

In our last lesson, we saw Agoonack at the seal house, then at home where they had seal blood soup for supper. Now, we are at her home, and we shall see what they did there.

Write on your slates what Agoonack found when she came home, who these people were, and what they did, the presents they gave her, and so on.

(This was the first time the pupils had ever heard the story. After they had listened to it, they reproduced it according to directions on their slates. Some of the most difficult words were put on the board.)

(There were four of the class ready in twenty minutes. The work of two is reproduced verbatim.)

Edward Thayer. When Agoonack got home she found company. It was a kudlunah, meaning a white man. He gave Agoonack a string of beads, and she looked up in his face and said, "Thanks." Metek grunted over a knife, which was the best thing he ever saw to cut with. When Metek asked him where his home is, and how he got there, the kudlunah points south and says *oomiack*, which means ship. The kudlunah tells Metek that he will take him to the great oomiack to-morrow. All day Agoonack has been saying, "Koyenna," meaning thanks. Agoonack is the first to see him coming home. She can see a little black speck on the snow. Metek has presents and treasures when he comes home. Metek is called down in the ship to see the captain. The captain has asked him if he will go with him to hunt walrus and seals. But Metek says he can not go and leave his wife and children home, because they can not hunt. The captain stops and thinks a minute, and then tells Metek to get them. Metek goes quickly home and gets them, and they all go on the great oomiack.

Bessie Smith. When Agoonack gets home from the seal hunt something very strange happens. A white man, or kudlunah, has come to visit them. When Metek asked him where he comes from, and when he points south and says *oomiack*, which means ship, they wonder how he got so far. He takes a string of beads from his pocket and gives them to Agoonack. She says, "Koyenna," which means thanks. He gives them knives, needles, and thread. That night they stay up late, and even little Sipsu, Agoonack's brother, gets behind his mother and listens to the kudlunah's stories about the oomiack. The next day the kudlunah and Metek go to the oomiack. The kudlunah thinks that maybe he had better not trust Metek, but on they go. When Metek gets home he has a great deal to tell about the oomiack. He tells about something from which fire flashes and a terrible noise follows, much better to kill seals with than the spears. Agoonack listens with delight. After the kudlunah has been with the Eskimo about three months, he calls Metek into the oomiack down in the cabin. He comes up with a smile on his broad face. This is what the captain has been telling him. He said, "Metek, I know you are such a good hunter, and if you will come with me a little farther north, I will reward you with guns, pistols, and knives." Metek answers, "I can not leave my wife and children behind. The kudlunah says he can take them along. This is the reason he wears a smile.

FRANKLIN SCHOOL—MISS TAYLOR, TEACHER.

[April 3, 1895—Class C, grade fourth.]

EARLY STEPS IN GRAMMAR.

Sentences on the board: (1) The ice is cold. (2) The water is deep. (3) The flowers are beautiful. (4) Those trees are fruitful. (5) The old horse walks slowly. (6) The fast train moves rapidly. (7) The neat boy writes neatly.

Q. What is the subject of the first sentence?—Tom. The subject of the first sentence is *ice*.

Q. What is the predicate of the first sentence?—Fred. The predicate of the first sentence is *is cold*.

Q. What is the affirming word in the first sentence?—Eva. *Is* is the affirming word in the first sentence.

Q. What is the quality spoken of in that sentence?—Asher. The quality of the ice is *cold*.

Q. What is the affirming word in the second sentence?—Fred. *Is* is the affirming word in the second sentence.

Q. What is the predicate in the third sentence?—Tom. *Are beautiful* is the predicate in the third sentence.

Q. What is *are* in the sentence?—Edna. *Are* is the affirming word.

Q. What is affirmed of the subject in the third sentence?—Hemp. *Beautiful* is affirmed of the subject.

Q. What is affirmed of the word *trees* in the fourth sentence?—Asher. *Fruitful* is affirmed of the trees.

Q. What is the subject of the fourth sentence?—Emma. *Trees* is the subject of the fourth sentence.

Q. You may read the affirming words in all four of these sentences.—Creston. *Is, is, are, and are*, are the affirming words in the four sentences.

Q. What are words called that affirm something of an object?—Elmer. The words that affirm something of an object are called verbs.

Q. You may tell what a verb is?—Frank. A word that states or affirms something of an object is a verb.

Q. What is the subject of the fifth sentence?—Alta. The subject of the fifth sentence is *horse*.

Q. What do you mean by the subject of a sentence?—Charles. The subject of a sentence is the name of the thing about which we are speaking.

Q. What part of speech is the word *horse*?—Eddie. The word *horse* is a common noun.

Q. What word is used there to tell what *kind* of a horse?—Joseph. *Old* is the word used to tell what *kind* of a horse it is.

Q. What part of speech are the words that tell what *kind*?—Edna. The words that tell what *kind* are *adjectives*.

Q. Are there any other adjectives in the last three sentences?—Amelia. *Old, fast, and neat* are the three adjectives in the last three sentences.

Q. Why is *fast* an adjective in the sixth sentence?—Asher. *Fast* is an adjective in the sixth sentence, because it tells what *kind* of a train.

Q. What part of speech is the word *neat*?—Carrie. *Neat* is an adjective, because it tells what *kind* of a boy.

Q. What is the verb in the sixth sentence?—Marion. *Moves* is the verb.

Q. What is a verb?—Amelia. A *verb* is a word that states or affirms something of an object.

Q. What is the object of which *moves* affirms something?—Charley. *Train* is the name of the object about which something is affirmed.

Q. How does the train move?—Rose. The train moves *rapidly*.

Q. What kind of a word is *rapidly*?—Ray. *Rapidly* is an adverb.

Q. Why is *rapidly* an adverb?—Ray. *Rapidly* is an adverb, because it tells *how* the train moves.

Q. Words that tell *how* are what kind of adverbs?—Eddie. Words that answer the question *how* are adverbs of *manner*.

Q. What is the adverb in the last sentence?—Edna. *Neatly* is the adverb in the last sentence.

Q. What is an adverb?

Fred. An *adverb* is a word added to the verb to limit its meaning.

Rose. A word added to a verb to limit its meaning is called an *adverb*.

Q. What is the adverb in the last sentence?—Asher. The adverb is *neatly*.

Q. To what word is it added?—Tom. *Neatly* is added to the verb *writes*.

Q. What part of speech is *writes*?—Emma. *Writes* is a verb.

Q. What does it express?—Alta. It expresses *action*.

Q. Do all verbs express action?—Joseph. No.

Q. What part of speech is *is* in the first sentence?—Hemp. *Is* is a verb.

Q. Does that express any action?—Class. No.

Q. What does it do?—Elmer. It states or affirms something of an object.

Q. What is the object of which it states something?—Asher. *Ice* is the object.

Q. In the last sentence, *the neat boy writes neatly*, what part of speech is *neat*?—Edna. *Neat* is an adjective.

Q. What part of speech is *neatly*?—Tom. *Neatly* is an adverb.

Q. Show how these words differ in form.—Edna. *Neatly* has *ly* added to *neat*.

Q. In the sentence, *The flowers are beautiful*, what part of speech is *beautiful*?—Charles. *Beautiful* is an adjective.

Q. What would I have to add to that word so as to make it an adverb?—Charles. You would have to add *ly* to *beautiful*.

Q. You may tell how adverbs are sometimes formed.—Eddie. Adverbs are sometimes formed by adding *ly* to the adjectives.

Q. Change this sentence so as to make *beautiful* an adverb.—Frank. The flowers are *beautifully* colored.

BRYANT SCHOOL—MISS BRENNAN, TEACHER.

[April 2, 1895—Class A, grade third.]

Flowers | grow.

Q. Read the sentence.—Marie. Flowers grow.

Q. Enlarge the sentence by telling *when* or *where* flowers grow.—Ralph. Some flowers | grow in summer.

Q. Do flowers grow only in summer?—Irene. In winter flowers grow in hothouses.

Q. Name the different kinds of flowers.—Milton. Roses, lilies, pansies, violets, pinks, etc.

Q. Now, who is ready to enlarge the sentence?—Florence. Some flowers, like roses and pinks, | grow in summer.

Q. Punctuate the sentence. (Child does so.)

Q. What kind of flowers are roses and pinks?

Mabel. Roses and pinks are beautiful flowers.

Regina. They are fragrant flowers.

Q. Where do these flowers grow?—Clara. They grow in gardens.

Q. Do they grow in any other place?—Charley. Yes; they grow in greenhouses.

Q. Enlarge the sentence that Florence gave.—Edith. In summer beautiful, fragrant flowers, like roses and pinks, | grow in greenhouses and in gardens.

Q. Punctuate the sentence.

Teacher. Do you think we might continue in this way, and so make a great many sentences about flowers?—Class. Yes, ma'am.

Teacher. Let us take a new sentence.

Streams | flow.

Q. How do streams flow.—Aileen. Some streams | flow gently and peacefully.

Q. Do all streams flow gently?—Louise. Sometimes streams flow swiftly.

Q. Where do streams flow?—Ernest. Streams flow over fields and through meadows.

Q. Enlarge the above sentence.—Herman. Some small streams | flow gently and peacefully over the fields and through the meadows.

Q. We will take this sentence:

Children | play.

Q. Where do children play?

Marie. Little children play in school.

Maud. Many children play jacks on the steps at noon and at recesses.

Q. Think of the children in the country; where do they play?—Pearl. They play down by the brook and in the fields.

Q. Enlarge the above sentence.—Alice. Happy little children | play down by the brook.

Teacher. By combining three or four of these sentences, and adding a few new ones, I think we can make a little story. With which sentence shall we begin?—Herman. Let us begin with "Children play."

Teacher. Very well. Imagine we are in the country. Ask me a question about that stream.—Ernest. Do you see that small stream flowing gently and peacefully over the fields and through the meadow?

Q. What grow near it? Express the thought which first enters your mind when you first notice the flowers.—Kate. What pretty flowers grow near it.

Q. Who are playing there? When?—Alice. Happy little children are playing there on this clear, warm day.

Q. How many are there?

Mabel. There are six children.

Regina. There are fourteen children.

Maud. There are two children.

Q. What are their names?—Maud. Edith and Joe.

Q. What is Edith doing?—Aileen. Edith is picking flowers.

Teacher. Think of one word for "is picking."—Louise. Gathers.

Teacher. We have just used the word "flowers." Think of a word that might be used instead of it.—Alice. Blossoms.

Q. What kind of blossoms are these?—Ralph. These are fresh blossoms.

Q. Tell me what Edith is doing?—Aileen. Edith gathers fresh blossoms.

Teacher. Look over there in the water. What do you see? What is Joe doing?—Pearl. Joe wades in to get some water lilies.

Q. Connect the two sentences.—Ianthé. Edith gathers fresh blossoms, while Joe wades in to get some water lilies.

Q. What are they going to do with these flowers?

Maud. They are going to make a beautiful wreath of them?

Florence. They are going to take them home to their mother.

Teacher. They know a poor sick girl who is unable to go out. What is her name?—Marie. Her name is Ellen.

Q. Why does she not go out?—Mabel. She must stay in bed because she is very sick.

Q. Think of another word for "sick."—Irene. Ill.

Q. For "bed."—Regina. Couch.

Q. What do you think the children will do with these flowers? Give me a thoughtful sentence.—Herman. They will take them to poor sick Ellen, who is too ill to leave her couch.

Q. Will she be pleased to receive these flowers? Use a sentence that expresses feeling.—Edith. How glad she will be to get them!

Q. Will she feel thankful to Edith and Joe for their kindness?—Harry. She will feel very grateful to Edith and Joe for their kindness.

Teacher. Kate, you may read the story.—Kate. Do you see that small stream flowing gently and peacefully over the fields and through the meadows? What pretty flowers grow near it! On this clear, warm day, two happy little children are playing there. Edith gathers fresh blossoms, while Joe wades in to get some water lilies. They will take them to poor sick Ellen, who is too ill to leave her couch. How glad she will be to get them! She will feel very grateful to Edith and Joe for their kindness.

Teacher. To-morrow we will select three short sentences, and enlarge them as we have done to-day. Each one of you will then write a little story on your slates. How many think you will be able to do so?

SCARRITT SCHOOL—MISS CUNNINGHAM, TEACHER.

[April 8, 1895—Class A, grade third.]

EXERCISE IN REPRODUCTION.

"Robbie's visit to the park," read from Stickney's Second Reader, pages 172-174. Pupils read a paragraph each. Then the teacher put the following words on the board and had the children pronounce them: *Robbie, Central Park, shrubs, means, saucy, Bunny, policeman.*

The teacher then wrote the following five questions on the board, the answers to which should constitute a paragraph:

- (1) Tell me where Robbie's aunt took him to visit?
- (2) Tell me about Central Park?
- (3) Tell some of the things Robbie and his aunt did?
- (4) Tell something about the squirrel they saw in the park?
- (5) What part of the visit did Robbie like best of all?

The class was divided into sections, and each section was given one of the above subjects on which to write.

(1) Mary Neal. Subject: *Robbie's visit to Central Park.*

Robbie's Aunt Jennie took him to Central Park one day. He was six years old that day, and he enjoyed the visit very much.

(2) Mattie Elmore. Central Park is a beautiful place. There are large gardens of flowers, larger than any in your garden. Central Park has a large number of trees and shrubs.

(3) Nettie Clinton. Robbie and his Aunt Jennie took a sail on the water. There were some white swans swimming on the water. Robbie gave them a piece of cake. They came up and ate the cake out of his hand.

(4) Opal Jacobs. Robbie saw a squirrel in the park. It was on a bush. Robbie gave it some cake, and then it jumped on his aunt's shoulders.

(5) George Buecking. Robbie liked the little squirrel the best of all that he saw in his visit.

The concrete story from five other children.

(1) Olive Peck. Robbie's aunt took Robbie to visit Central Park.

(2) Lizzie Arnold. Central Park is a very beautiful place. It has many flowers in it. Robbie and his aunt saw swans, deer, and a little gray squirrel. Aunt Jennie called the squirrel, and it ran up and down her shoulder.

(3) Glenn Robinson. Robbie and his aunt had a ride in a boat, and Robbie gave some swans a piece of cake.

(4) Eva Beekman. After Robbie and his aunt had taken their walk across the bridge they saw a gray squirrel in some bushes. When Robbie saw the squirrel he said, "Oh! Aunt Jennie, come here quick; here is a squirrel!" When his aunt came she spoke to the squirrel and the squirrel jumped on her shoulders.

(5) Ida Rumsbeck. Robbie and his aunt saw a squirrel out in Central Park. Robbie called the squirrel to him, and the squirrel ran up his arm. Robbie liked the squirrel best of all.

FRANKLIN SCHOOL—MISS MACK, TEACHER.

[April 3, 1895—Class A, grade second.]

OUTLINE ON BOARD.

Sentences tell	{	What things are.
		How things are.
		What things will do.
		What can be done to things.

Assistant Superintendent. Miss Mack, in your work do you follow the plan of that outline in much that you teach concerning objects?—Miss Mack. Yes, sir; that is what I have found it particularly good for.

Assistant Superintendent. What advantage do you think that plan of treatment has?—Miss Mack. It teaches language, observation, accuracy, and connected thought.

Teacher. We will think *what things are*, and talk about the dog this afternoon. You may tell me about the dog.

Flory. This is a curly dog.

Ray. This is a useful dog.

Alice. This is a trained dog. This is a friendly dog.

Q. Who can put three of those sentences together in one sentence?—Robert. This is a curly, useful, and friendly dog.

Q. You may tell me *how things are*. How is the dog?

Anna. The dog is black.

Homer. The dog is gentle.

George. The dog is trained.

Ray. The dog is black and white.

Q. You may put three of those sentences together in one sentence.—Ben. The dog is tame, gentle, and black.

Q. Now, you may think of *what things will do*. Think of what the dog can do.

John. The dog can swim.

Charley. The dog can jump through a hoop.

Stella. The dog can bite.

Mattie. The dog can catch a rabbit.

Q. You may give me one sentence containing three of those sentences.—Mary. The dog can catch a rabbit, jump through a hoop, and can bite.

Q. Now, you may think of *what can be done to things*. What can we do to dogs?

Charles. The dog can be trained.

Robert. We can make a dog dive into the water after a rock.

Mamie. The dog can be petted.

Q. Give me one sentence with three of those in it.—Alice. The dog can be trained, petted, and can be made to dive into the water after a rock.

Teacher. After a lesson has been developed this way, pupils are expected to reproduce it in a written exercise, with correct spelling and punctuation.

Assistant Superintendent. Miss Mack, let the children work this out on their slates, so that we can get a copy of what two or three of them can do.

Gladys. *The Dog*.—This is a gentle, kind, and friendly dog. The dog is young, tame, and playful. The dog can swim, play, and bark. The dog can be trained, potted, and loved.

(Pupil's name omitted; one of the poorest slates.) This is a black, good, and small dog. This dog is gentle, tame, and has long hair. This dog can swim, carry a basket, and catch a rabbit. This dog can be trained and learned to dive under the water after a rock.

Maude. (One of the best.) *The Dog*.—This is a curly, black, and large dog. The dog is gentle, playful, and useful. The dog can bite, run, and follow his master. It can be trained, tied, and whipped.

Rilla. *The Dog*.—This is a curly, useful, and pretty dog. The dog is black, small, and gentle. He can jump, bite, and will follow people. The dog can be potted, trained, and made dive under the water after a rock.

WOODLAND SCHOOL—MISS RAMSEY, TEACHER.

[April 4 1895—Class A, grade second.]

Purpose of the lesson: To show the use of the apostrophe.

- Q. I want to know what to call that little mark (')?—Daisy. An apostrophe.
- Q. Can you think of a word in your reading lesson that has that mark in it?—Elmer. Don't [writes the word on the board].
- Q. Why do you put the apostrophe there?—Elmer. Because it makes it shorter.
- Q. What other reason?—Elmer. Because the letter *o* is left out.
- Q. Can you think of another word?—Alice. Can't [writes word on the board]. I use the apostrophe because the letter *o* is left out.
- Q. What would it be if the letter were not left out?—Alice. Cannot.
- Q. Who can think of another word?—Marie. Isn't [writes word on the board].
- Q. Why did you put the apostrophe there?—Marie. Because the letter *o* is left out.
- Q. What two words would that be?—Mattie. *Is* and *not*.
- (Throughout the lesson, in asking questions to find ownership, the teacher takes up the article mentioned and holds it before the class.)
- Q. Whose slate is that?—Fred. That is Robbie's slate.
- Q. Whose pencil is this?—Robbie. That is Joe's pencil.
- Q. Whose slate is this?—Ella. That is Ruby's slate.
- Q. Whose pen is this?—Lela. That is Frank's pen.
- Q. Whose box is this?—Alice. That is Fred's box.
- Q. Whose sponge is this?—Mamie. That is Lela's sponge.
- Q. Whose pocketbook is this?—Frank. That is Ben's pocketbook.
- Q. Whose bottle is this?—Eddie. That is Ellen's bottle.
- Q. Whose slate is this?—Hazel. That is Mary's slate.
- Q. Please write that on the board.—Albert. That is Mary's slate.
- Q. What is the matter with it?—Daisy. He left out the apostrophe in Mary's.
- Q. Who owns that slate?—Fred. Mary owns that slate.
- Q. Albert, correct your sentence.—(Albert puts apostrophe in *Mary's*.)
- Q. What word is it that shows who owns that slate?—Daisy. *Mary's*.
- Q. We use an apostrophe when we leave a letter out. We are going to put an apostrophe in *Mary's*, because Mary owns that slate. Whose pencil is this?—Albert. That is Lela's pencil.
- Q. Write that on the board.—Elmer. That is Lela's pencil.
- Q. What mark did you put there to show who owned the pencil?—Albert. The apostrophe.
- Q. Do you see anything wrong with his sentence?—Albert. Oh, I did not spell *pencil* right.
- Q. How do you spell pencil?—Albert. *P-e-n-c-i-l*, pencil.
- Q. Do you think his sentence is correct now?—Ruby. He left out the period.
- Q. What do you call that sentence?—Hazel. A statement.
- Q. Now, Albert, write your sentence correctly. Albert writes: *That is Lela's pencil.*
- Q. Whose slate is this? You may write on your slates whose slate this is. Earl has on his slate: *That is Rob's slate.*
- Q. What word shows that it is owned?—Earl. *Rob's*.
- Q. How do you spell it?—Earl. Capital *R-o-b* apostrophe *s*.
- Q. Why did you begin it with a capital?—Ella. Because it is a boy's name.
- Q. Why did you put an apostrophe in the word *Rob's*?—Ruby. Because the slate belongs to Rob.
- Q. I will tell you this myself and you may write it. The bird's nest is in the tree. You may read your sentence for me.—Ella. The bird's nest is in the tree.
- Q. How did you commence the sentence?—Ella. With a capital *T*.
- Q. Why?—Ella. Because it is the beginning of a sentence.
- Q. What did you put at the end of your sentence?—Mary. A period.
- Q. Why?—Mary. Because the sentence is a statement.
- Q. How did you write the word *bird's*?—Alice. *B-i-r-d* apostrophe *s*.
- Q. Why did you put an apostrophe there?—Alice. Because it tells whom the nest belongs to.
- Q. You may tell me when to use the apostrophe.—Lewis. We always use an apostrophe when it denotes ownership.
- Q. What does *denote* mean?—Alice. *To show*.
- Q. What does *ownership* mean?—Elmer. Somebody owning it.
- Q. Tell me something you own.
- Fred. I own my suit of clothes.
- Mary. I own my doll.
- Q. Who owns this pencil?—Mattie. That is Ruby's pencil.
- Q. What word shows who owns it?—Lela. *Ruby's*.
- Q. How would you write Ruby's?—Hazel. Capital *R-u-b-y* apostrophe *s*.
- Q. Why do you begin it with a capital?—Hazel. Because it is a girl's name.
- Q. When do we use the apostrophe?—Daisy. Always use an apostrophe when the word denotes ownership.
- Q. When else do we use an apostrophe?—Ruby. Use an apostrophe when there is a letter left out.

FRANKLIN SCHOOL.—MISS ROSENBERGER, TEACHER.

[April 3, 1895.—Class C, grade second.]

LANGUAGE LESSON ON FORM.

Teacher. The object of this lesson is to cultivate the habit of observation; to develop the forms; to teach the proper names for the different directions and positions, and also to use these names in conversation. The idea of this lesson is to build up from straight lines to form the cube, and to see the relation of lines to one another.

Q. Show me the surface of your slate.—Nellie. This is the surface of my slate [points to flat side].

Q. What is the surface of anything?—Nellie. The surface of anything is the outside of it.

Q. You may go to the door and show me the surface of the door.—Harry. This is the surface of the door [points to the outside of the door].

Q. You may show me the surface of the blackboard.—Arthur. This is the surface of the blackboard.

Q. Who can again tell me what the surface of anything is?—Mary. The surface of anything is the outside of it.

Q. Show me the edge of your desk.—Ray. This is the edge of my desk [points to edge].

Q. Show me the edge of the door.—Don. This is the edge of the door [points to edge].

Q. You may all show me the edge of your slate.—(Children point to edges of their slates.)

Q. How many corners do you see on your slates?—Wayne. I see four corners on my slate.

Q. You may come here and show me the corners, and talk about it.—Wayne. This is one corner. and this is another.

Q. How many corners did he show me?—Class. He showed you two corners.

Q. I want someone to show me all the corners you see on one surface of your slate.—Kathleen. This is one corner, this is another, this is another, and this is the last corner.

Q. Show me the opposite sides of the blackboard.—Ray. This side of the blackboard is opposite to that side [points to opposite side].

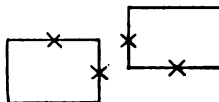
Q. Show me some other opposite sides.—Marie. This side and that side are opposite to each other [points to top and bottom of blackboard].

Q. When one side meets another side what do we say of the two sides?—Shirley. When one side meets another side we call the sides adjacent.

Q. Show me the adjacent sides of the blackboard.

Arthur. This side is adjacent to that side.

Mary. This side is adjacent to that side.



Q. Hold your slate in a horizontal position.—(Ruth does so.)

Q. Place your slate parallel to Ruth's.—Wade. My slate is parallel to Ruth's slate.

Q. Johnnie, place your slate parallel to Ruth's slate.—Johnnie. My slate is parallel to Ruth's slate.

Q. Is it parallel to any other slate?—Johnnie. My slate is parallel to their slates.

Q. Matilda, place your slate in a vertical position.—Matilda. My slate is in a vertical position.

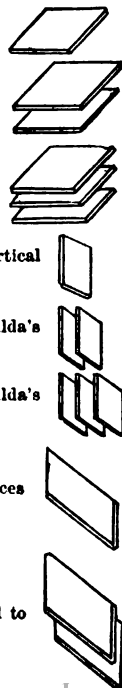
Q. Place your slate parallel to Matilda's slate.—Ray. My slate is parallel to Matilda's slate.

Q. Don, place your slate parallel to Matilda's slate.—A. My slate is parallel to Matilda's slate.

Q. Only to one slate?—Don. My slate is parallel to their slates.

Q. Now, we have one more position. What is it?—Lee. Oblique, or slanting [places slate in an oblique position].

Q. Place your slate, Alice, so that it is parallel to Lee's.—Alice. My slate is parallel to Lee's slate.



Q. Gertrude and Robert, come forward with your slates. Gertrude, place your slate in a horizontal position. Robert may place his perpendicular to Gertrude's. What kind of an angle have you formed?—George. We have formed a right angle.

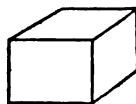


Q. You may place your slate to make another right angle.—(George places slate at another edge.)

Q. I want another right angle.—(Six children form solid of their slates.)

Q. If these slates were all of the same size, and edges the same, what form would we have made?—Class. A cube.

Q. How many sides has a cube?—Kathleen. A cube has six sides.



FRANKLIN SCHOOL—MISS KOONS, TEACHER.

[April 3, 1895—Class C, grade second (beginning)—Pupils in school 10 months.]

Q. Who will give me a rule about how to begin a sentence?

Ben. The first of a sentence begins with a capital.

Frank. Every sentence begins with a capital.

Q. My book was lost. Change this sentence to the plural form.—Mary. Our books were lost.

Q. What is the plural of *my*?—Ben. *Our*.

Q. What is the plural of *was*?—Nellie. *Were*.

Q. The lady is gone. Change to the plural.—Mary. The ladies are gone.

Q. What is the plural of *lady*?—Earl. *Ladies*.

Q. What is the plural of *is*?—Edna. *Are*.

Q. The *knife* belongs to Mary. Change this sentence to the plural.—Laura. The *knives* belong to Mary.

Q. What is the plural of *knife*?—Charley. *Knives*.

Q. Change this sentence to the plural: *Does the bird sing?*—Minnie. *Do the birds sing?*

Q. With what does that sentence end?—Mattie. With a question mark.

Q. Why?—Mattie. Because it asks a question.

Q. Give the plural of the words that I give you, and spell them:

Lady.—John. *Ladies*; l-a-d-i-e-s.

I.—Edna. *We*; w-e.

Was.—Laura. *Were*; w-e-r-e.

Knife.—Earl. *Knives*; k-n-i-v-e-s.

Sheep.—Nellie. *Sheep*; s-h-e-e-p.

Man.—John. *Men*; m-e-n.

Am.—Tom. *Are*; a-r-e.

Woman.—Sadie. *Women*; w-o-m-e-n.

Has.—Ben. *Have*; h-a-v-e.

Does.—Mary. *Do*; d-o.

My.—Edna. *Our*; o-u-r.

Q. I want a sentence with that in it (*no*) [teacher writes the words on the board; the pupils pronounce them].—Laura. I *no* my lesson.

Q. Who will give me a sentence with the word in it?—Birdie. I *no* the girl.

Q. Who will give it correctly?—John. He has *no* mother.

Q. *Know*.—Nellie. I *know* my lesson.

Q. *New*.—Earl. I have a *new* suit.

Q. *Knew*.—Tom. I *knew* that you were bad.

Q. *Write*.—Edna. I *write* my lesson.

Q. *Right*.—Frank. The boy has his *right* hand on the book.

Q. *Hear*.—Willie. I *hear* the band play.

Q. *Here*.—Gertie. *Here* we are.

LATHROP SCHOOL—MISS MAGERLE, TEACHER.

[April 3, 1895—Class A, grade first—Pupils in school 6½ months.]

Purpose: To teach the use of "this" and "that."

Q. You may point to something in the room.

Ruby. This is a table.

Renee. This is an eraser.

Vida. This is a thermometer.

Thomas. This is an ink bottle.

Teacher: I will point to something, and you may tell me what it is [teacher points to the different objects, and child tells what they are].

Barrett. That is a chair.

Willie. That is a desk.

John. That is a pencil.

(Child comes to the table, picks up the object, and tells what it is.)

Arthur. This is a bottle.

Class. That is a bottle.

Ruby. This is an oil can.

Class. That is an oil can.

Renee. This is an orange.

Class. That is an orange.

Q. For what do we use *this*?—Vida. We use *this* for something that is close to us.

Q. For what do we use *that*?—Willie. We use *that* for something that is far away from us.

Purpose: To teach the use of the "singular" and "plural."

Teacher. Once I saw in a room where I was sitting a little animal come out of a hole near the cupboard and run across the room. It was about three inches long, had a sharp nose, with whiskers on each side of its face, and two little bright eyes. What do you think it was?—Myrtle. I think it was a mouse.

Teacher. Pretty soon I saw another little mouse come out of the hole and run across the room; then how many were there?—Josie. There were two mice.

Q. Pretty soon I saw another little mouse come out; then how many were there?—Joe. There were three mice.

Q. Soon I saw another mouse; then how many?—John. There were four mice.

Q. What did you call the little animal that came out of the hole?—Eva. I called the little animal a mouse.

Q. What would you call two such animals?—Vida. I would call two such animals mice.

Q. What would you call three such animals?—Walter. I would call three such animals mice.

Q. What would you call one such animal?—Hans. A mouse.

Q. What would you call more than one such animals?—Ruby. Mice.

Q. How many animals does *mouse* mean?—May. *Mouse* means one animal.

Q. How many animals does *mice* mean?—Barrett. *Mice* means more than one animal.

Q. What word means more than one mouse?—Frank. *Mice* means more than one mouse.

Q. What word means more than one child?—Walter. *Children* means more than one child.

Q. What word means more than one man?—Gertie. *Men* means more than one man.

Q. What word means more than one woman?—Vida. *Women* means more than one woman.

Q. What word means more than one ox?—Ruby. *Oxen* means more than one ox.

Q. What word means more than one book?—Renee. *Books* means more than one book.

Q. What word means more than one foot?—Josephine. *Feet* means more than one foot.

Q. What word means more than one hand?—Willie. *Hands* means more than one hand.

Teacher. I will give you one and you may tell me more than one. A mouse runs.—Willie. Mice run.

Q. A horse trots.—Hans. Horses trot.

Q. A child plays.—Barrett. Children play.

Q. A man works.—John. Men work.

Purpose: To show the use of "is" and "are," as singular and plural.

Q. Is the ruler on the table [teacher places ruler on the table]?—Renee. The ruler is on the table.

Q. Are the rulers on the table [teacher places another ruler on table]?—Josephine. The rulers are on the table.

Q. Is the book in my hand [holds up book]?—Hans. The book is in your hand.

Q. Are the books in my hand [holds up two books]?—Ruby. The books are in your hand.

Q. Is the egg on the table [places glass egg on the table]?—Willie. The egg is on the table.

Q. Are the eggs on the table [places another glass egg on the table]?—Tom. The eggs are on the table.

Q. When do we use *is*?—Willie. We use *is* when we speak of only one.

Q. When do we use *are*?—Vida. We use *are* when we speak of more than one.

Q. I will give you one, and you may give me more than one. The ruler is long.—Roy. The rulers are long.

Q. The tree is high.—Myrtle. The trees are high.

Q. The apple is sweet.—Eva. Apples are sweet.

Q. I will give you more than one, and you may tell me one. The hats are black.—Walter. The hat is black.

Q. The eggs are in the basket.—Josephine. An egg is in the basket.

Q. The trees are tall.—Hans. The tree is tall.

Purpose: To show the use of "and."

Q. Where is John [child comes forward on platform]?—Class. John is on the platform.

Q. Who are on the platform now [brings another child forward]?—Class. Anna and John are on the platform.

Q. Who are on the platform now [there are three children on the platform]?—Class. Anna, John, and Walter are on the platform.

Q. (Teacher places objects on the table.) What is on the table?—Leola. An album and a ball are on the table.

Q. (Teacher places another object on the table.) What is on the table now?—Lucile. An album, a ball, and an ax are on the table.

Purpose: To show the use of "was" and "were," as singular and plural.

Q. Was the book on the table [puts book on the table and takes it off]?—John. The book was on the table.

Q. Were the books on the table [puts two books on the table and takes them off]?—Willie. The books were on the table.

Q. Was the pencil in the box [puts pencil in box and takes it out]?—Barrett. The pencil was in the box.

Q. Were the pencils in the box [puts two or three pencils in the box and then takes them out]?—Tom. The pencils were in the box.

Q. When do we use *was*?—Willie. We use *was* when we speak of only one.

Q. When do we use *were*?—Eva. We use *were* when we speak of more than one.

Q. I will give you one, and you may tell me *more than one*:

The book was on the table.—Hans. The books were on the table.

The hat was in the cloakroom.—Mary. The hats were in the cloakroom.

The picture was on the wall.—Johnnie. The pictures were on the wall.

Q. I will give you more than one, and you may tell me one:

The papers were torn.—Willie. The paper was torn.

The eggs were in the nest.—Gertie. The egg was in the nest.

EMERSON SCHOOL—MISS MATTHIAS, TEACHER.

[April 8, 1895—Classes A and B, grade first.]

Q. What shall we write about to-day?—Johnnie. A horse.

Q. Who shall own the horse?—Charley. Freddy owns the horse.

FREDDY'S HORSE.

Q. What mark shows that Freddy owns something?—Etta. The apostrophe s.

Q. What color shall Freddy's horse be?—Decoy. *Fred's horse is brown.* [The italicized is the sentence the teacher writes on the board for the story.]

Q. Where did Freddy get his horse?—Charles. Fred got his horse at the barn.

Q. What other word could we use for Fred?

Johnnie. *He.*

Fairy. He got his horse from his papa.

Kitty. He got his horse in the country.

Nellie. He got his horse from the stock yards.

Q. What would you say instead of *got*, I do not think *got* is as nice a word as we could use?—Decoy. *He brought his horse from the country.*

Q. What did he name his horse? What do you think is a nice name?—Charley. Bob.

Q. When is he going to ride his horse Bob?—Fairy. He went riding on Sunday.

Q. Tell me something about it. One Sunday morning, what kind of a morning was it?—Nellie. A nice morning.

Q. We do not want to say nice.—Nellie. *He rode Bob one bright Sunday morning.*

Q. What happens to Fred?—Fairy. The horse threw him up in the air.

Q. Yes, that is what the horse did, but who can tell it better?

Charley. He kicked him up in the air.

Nellie. Bob threw him off in the mud.

Q. What made Bob throw him off in the mud?—Willie. Fred whipped the horse so hard that he threw him off in the mud.

Q. Then we will write: *While riding, Fred hit the horse so hard he threw him off in the mud.*

Q. What do you think of Fred for doing such a thing as that?—Nellie. I think Fred was a bad boy.

Q. Tell me that, so that I can write it.—Nellie. *Fred. Fred, you are a bad, bad boy!*

Teacher. Take your slates. We are going to write that story on our slates. Write it just as nicely as you can. Put in all of the marks.

Freddy's horse.—Fred's horse is brown. He brought his horse from the country. He rode Bob one bright Sunday morning. While riding, Fred hit the horse so hard he threw him off in the mud. Fred, Fred, you are a bad, bad boy!

CHAPTER XV.

EDUCATIONAL VALUES.

[The following article on educational values I reprint from the report of the St. Louis schools for the year 1872-73.¹ It contains a somewhat fuller discussion of some of the points relative to the educative value of the several studies in elementary and secondary schools, and in this way may be useful in explaining points that are left obscure in the report of the subcommittee on correlation of studies.]

The educator is called upon especially to scrutinize the character of his elementary work. He must see from afar the effects of the trifling things with which he makes his beginnings. It is the feeling of this duty that has in late years drawn so much attention to Froebel's theories of the kindergarten and to primary education generally. It is all essential that the foundation should be sufficient for the superstructure. Of late, therefore, much thought has been expended on the question of adapting the course of study in the common schools to the actual demands upon the citizen in after life. The same zeal which has challenged the methods and subjects of the common schools has with still more emphasis challenged the higher education in our colleges and universities. It has demanded the substitution of more practical studies for the traditional disciplinary course. It has asked for more science and less Latin or Greek and for a radical extension of the elective system of making up a course of study for each individual. Much has been accomplished by this movement toward gaining its points. Meanwhile a vigorous reaction has set in, and the old finds its defenders and apologists. The discussion widens its scope and extends to many other phases not originally called into question, not only the proper course of study for the public schools, but their right to exist on appropriations from the public treasury; especially with reference to the public high school the discussion is a warm one. Teachers and directors of public-school systems have become suddenly aware that there may be an "irrepressible conflict" between the system of public and that of private instruction. It is somewhat startling to learn that there are two systems firmly established in our land confronting each other with radically different theories as to a proper course of study. Such hos-

¹ By W. T. Harris, superintendent.

tility could not but develop sooner or later into an open contest. Now that the general attention is directed to education as an element of national and social strength, we can no longer avoid a discussion of these differences and of the theories on which they are based. The peaceful victories of industry at Paris, London, and Vienna and the colossal victories of Prussian arms at Sadowa and Sedan have aroused statesmen and political economists to the study of public education as essential to national strength in productive industry and in the field of battle as well. What this education should be, how far it should be carried, whether compulsory or not, whether there should be different courses of education, adapted to the supposed destinies of the pupils—these and other kindred questions must be discussed in the light of fundamental principles. On the one hand it is contended, in the interest of productive industry, that the public schools, being for the masses who are destined to fill the ranks of common laborers, should give a semitechnical education and avoid the purely disciplinary studies. The latter should be reserved for private academies and preparatory schools founded by private enterprise and open to such of the community as can afford to patronize them. The higher education in this country conducted in its colleges and universities should, according to this view, have no organic relation whatever to the public school system, but only to the system of preparatory schools and academies supported by private wealth. That the effect of such a state of affairs is to injure the cause of education in general, who can doubt, when he reflects that such isolation must have the effect of arraying the supporters of public schools and those who have received the primary education given in them against the supporters of higher education and against the class of citizens who have received it? For it will result that those who receive a higher education will have been, during their whole course in a system of schools founded on a basis different from the public schools, having a different course of study and supported in a radically different manner. That the graduates of higher institutions should under those circumstances be in sympathy with public school education is impossible. The public schools would necessarily be the schools of a caste—of the proletariat—the class whose chief organ is the hand, and whose brains are educated solely to serve the hand better. The very persons themselves are called “hands” very appropriately.

In this country, with its boundless possibilities, living as we do largely upon our hopes, conscious of a rapid development in the past and of great prospects in the future, with a national history whose biographical side is the story of “self-made” men, aspiration is the leading characteristic of the people, and the poorest immigrant here soon kindles with its impulse, and while he endeavors by thrift to accumulate a fortune, he prepares for its perpetuity by educating his children.

There is nothing more favorable to the character of the foreigner newly arrived on our shores than this, that he is everywhere eager to

avail himself of the school privileges. To the self-respect born of aspiration, what greater shock can be offered than the establishment of caste schools—public schools founded especially for the industrial class, to the end that its children being born from “hands” shall be “hands” still, and shall not mingle with the children of the wealthy, nor with those of the liberally educated. Such discrimination leads the laborer to refuse all school education unless he can afford to pay for it in the private school.

The complete degradation of the public school results. On the one hand those who have received higher education have been nurtured in an atmosphere of contempt for the free schools of the laboring classes. On the other hand the laboring classes themselves despise the symbol of their inferiority and the institution designed to make their inferiority hereditary.

But it may be that a higher education demands a primary education specially designed as preparation and introduction to it. It is possible that an education, to be completed in three or five years, ought to be on an entirely different plan from that intended to cover ten or fifteen years. If such were found to be the case, our only remedy might be a twofold course in the public schools—a so-called “general course” and a “classical course.” Where this were not feasible we might lament the fate of the public school, but could not remove its necessary evils. It would inevitably become the school of the proletariat, and the flourishing private school would draw away the children of wealth and competence and furnish them a different course of study.

This question touches most vitally our whole public school system, and especially the course of study in the high school. Let us inquire, therefore, what are the current standards of education, as set up by the public and private schools.

According to the theory on which college education rests, the preparatory schools should confine their work almost entirely to the disciplinary studies. The mathematics and Latin and Greek are the main requisites for admission. Not only is this the case, but for two years after admission there is very little deviation from this course. Harvard, by raising the standard for admission by at least a year's work, now makes Latin, Greek, and mathematics elective after freshman year, and requires physics, rhetoric, history, and elementary French as the regular studies of sophomore year. By this it will be seen that if public schools are to fit their pupils for the colleges they must adopt the same course as the academies and special preparatory schools and make thoroughness in collateral or information branches unessential for promotion. By the college system these collateral branches shall be reached only after the disciplinary course is finished. Even Harvard's recent and noteworthy changes consist in demanding another year's work in the preparatory school on Latin, Greek, and the mathematics. A small departure from this looks also in the direction of allowing previous work in French and other studies as an equivalent

for required work. The natural sciences are to be included in the preparatory work at some future time.

It does not appear that any college has made so great a departure as to require for admission just what a public high school would consider a proper requirement for a diploma.

The public schools have generally adopted a course of study resting on a different theory from the one on which that of the colleges is based. The course of study in the public schools assumes the principle that it is best to unite disciplinary studies with collateral studies intended to supply information and insight. This union of discipline and knowledge must begin in the primary school and continue through the high school.

The amount of actual culture (including under this term both discipline and knowledge) represented by the public high school course is almost equal to that attained by the students who have completed sophomore year in most colleges—that is to say, a graduate of a city high school is as able to pursue independent investigations into the various branches of science and literature, native and foreign, as the college student of two years' standing. What he has been obliged to do thoroughly in history, United States and European; in geography, descriptive and physical; in English literature and the grammars of English, Latin, and French, or German; rhetoricals, writing, spelling, and reading; in physics, chemistry, or natural history; in mathematics; in mental and moral philosophy—what he has done in these studies is an equivalent for the Latin, Greek, and mathematics of freshman and sophomore years, together with the preparatory studies actually required.

Now, what are the facts as to admission to the colleges? The graduate of the high school is placed on the same basis as the specially prepared student who is really two years his junior in general culture. This injustice prevents the high-school graduate from resorting to the regular course in our colleges.

The question is narrowed down to this, Which is the correct system, that of the colleges which separates, or that of the public schools which unites discipline and knowledge? If the latter, then the colleges of the land ought to be reconstructed and adapted to the prevailing system of education here well established. If the former is right, then our public school system ought to be purged of the collateral work in its course of study. Finally, if both are right and necessary, each in its own sphere, then it is evident that there is required a system of private or public schools which occupy the place that the academy system in New England and New York occupies. Into these must be sent those pupils who expect to fit for a higher education. This latter alternative does not furnish a solution of the difficulty. There still remains, as has been stated at length, an irreconcilable conflict between the public school system and the system pursued in these preparatory schools.

The conflict lies between the systems as now established, and not between the systems as they ought to be. It seems to me that the public school system is substantially the correct one, and that the higher education of the country should adapt itself to it. This will appear evident if I can demonstrate that the best course of study for a short school period is a section of the best course of study for a long period, and that conversely the long course of study can to best advantage take up for its preparatory studies just what the common school should teach. In brief, if the course of study is one for culture and for business or the professions, so that, whatever section of it be cut off from the beginning furnishes the best course up to that point, whether regarded as preparatory to a continuation of the course of study or a completed course—then it will be conceded that higher education and common school education should both adopt that course, and thus become mutually complementary. Then the academies and classical schools, private institutions supported as special feeders for the colleges, must perforce adopt the same course as the common schools.

That this is plausible I shall undertake to prove by a brief review of the causes that have led to the differences shown to exist, and that it is rational I shall endeavor to show by a survey of the psychological principles that should determine the selection of a course of study.

In all times nations have recognized the necessity of educating their directive intelligence. Those who are to rule are carefully educated for this purpose. Public money has never been grudged for the education of the governing classes. So soon as the State has found that its national strength depended on the education of a special class, that class has at once been provided for. The immense sums recently expended in the various countries of Europe for industrial education show that statesmanship has at last found out that political prosperity depends upon the prosperity of the civil community. In our comparatively new experiment of a "government of the people, by the people, and for the people," to educate the ruling class means to educate all the people. But in the earlier days of our history the system of education was definitely shaped toward providing a learned few to look after the highest interests, the clergy, the physicians, the lawyers. The three R's, reading, writing, and arithmetic, were for all. To these essentials the candidates for the profession added Latin, Greek, and higher mathematics, and then entered professional schools to study their specialties. A liberal education included the classics and mathematics, the common school education included only the three R's. But the newspaper and magazine, together with rapid transportation, have opened up so great possibilities to the one who possesses a common education that he continues his theoretic education after school life almost inevitably. The former standard of a liberal education is attained by the average of the community. The development and rapid growth of the sciences and of modern literature have added such immense provinces to the domain

set apart for a liberal education that it now bears little resemblance to its first shape and magnitude. Hence, it happens that while our higher education demands only disciplinary studies as preparatory to it, and then proceeds to add at least two years more of disciplinary studies, the growth of realized intelligence, in the shape of science and literature, has introduced changes that have destroyed its symmetry and adaptation. In the common school the three R's have been so expanded by the contents they have received from literature and the sciences of nature, and of man, that they furnish much more than is required by the colleges, and much more than is used as a foundation for the superstructure there built. Moreover, the same causes that have operated to expand and fill up the common school course have likewise influenced the college course, but not in the same way. Their influence in the common school course is felt throughout its entire extent; in the college course its presence is recognized by an expansion during the last part of it. After discipline is obtained, then the student is prepared to apply himself to the rich contents of the modern world. Science, art, and history may then be explored. Short excursions are accordingly made into those realms, chiefly, however, by means of the oral lectures of the professor, who gives fine summaries of what has been accomplished in this or that special province. To such students as have no familiar acquaintance with a considerable number of the primitive facts and details, the generalizations of the professor are vague and meaningless. The ideal of the course of study in our higher education finds thus its type in the palm tree, which climbs nearly to its full height branchless and then expands suddenly into full foliage. If the plan which the public schools have unconsciously and undesigningly adopted were followed, its type would be a tree that expands into foliage from below up to the top. What serious obstacle is there in the way of adopting for the college course a curriculum involving a central axis of discipline studies and a complement of accessory branches yielding information and insight? To the severe disciplines of Latin, Greek, and the mathematics, add the sciences—both natural and social-political—and literature and civil history. The preparation for college should then demand the rudiments of science, literature, and history. This change would adapt the college to the public school course.

I do not ignore here the important consideration—once far more important than now—which goes to justify the present college course. I allude to the principle that education must involve a period of estrangement from the common and familiar. The pupil must be led out of his immediateness and separated in spirit from his naturalness, in order that he may be able to return from his self-estrangement to the world that lies nearest to him and consciously seize and master it. Without such self-alienation that which lies nearest to man and deepest in his nature does not become objective to him at all, but remains merely instinctive and implicit. Therefore there is a deep-lying ground for taking the student out of the familiar modern world and requiring

him to breathe the atmosphere of the far-off and distant world of antiquity for several years of his life. When he again approaches his own world he is vividly conscious of it by reason of its obvious differences from the classic world, with which he has become familiar. Further reasons to strengthen this position will also be found in a consideration of the specific psychological import of the study of the classics, a consideration which it is necessary to undertake as a preliminary to the thorough investigation of the principles of a course of study. I will anticipate here, however, the final grounds of decision against the present system by saying that the expansion of the modern world of realized intelligence is so great that it leads the student quite irresistibly into the self-estrangement spoken of above. Its art and literature portray the widest and deepest collisions of the problem of life; its science enumerates the whole range of existences, whether corporeal, like the mineral, plant, or animal, or incorporeal, like human institutions and generalizations. Besides this, the proper mastery over any province of knowledge involves three stages, and these must be separated in time long enough to allow of complete assimilation. The perceptive, the reflective, and the stage of insight can not be simultaneous. This points to the principle which requires the course of study to be exhaustive at each of its epochs—including all the representative provinces in some one of their types at all stages of progress. The mind should grow with all its windows open from the beginning. What it acquires in its early stages will be rudimentary, but will furnish a rich native store for future thought when the period of reflection sets in stronger and stronger. The roots of the sciences and literature and history should go down deep into the earliest years, so that the unconscious influence derived thence shall assist in molding the taste, will, and intellect during the most plastic period of growth. Without this thorough assimilation with the whole intellectual being—the unconscious molding of one's view of the world (*Weltvorstellung*, as the Germans call it)—a growth of years—later scientific and literary studies are likely to be barren, lacking a fruitful soil in the disposition (*Gemüth*) and phantasy. Almost everything great in the world of reason has a slow gestation, first gathering force in the disposition and then in the phantasy, coming gradually into shape and definiteness through a series of monstrous forms before it sees the light of conscious reason.

THE STUDY OF THE CLASSICS.

No one who considers carefully the psychological results of classic study can help feeling some degree of dismay at the treatment such study receives at the hands of a majority of our so-called "prominent educators."

The cause of the public schools is indeed greatly injured by unwise zeal. Much of the alienation discoverable toward public schools on the part of those who conduct higher education is traceable to that

feeling of distrust engendered by the tirades of naive, unconscious men, who find themselves face to face with a question that has two antithetic extremes, whose mediation reaches far down into the mysteries. With the cant of progress and reform on their tongues and a polemical flourish of the epithet "old fogy," they challenge whatever they can not justify on immediate, simple, and therefore shallow grounds. Hence they are sure to challenge pretty much all that is deep and rational. Nor are they the ones to blame. For there is little adequate justification proffered on the part of the installed professors who would seem called upon to defend their province of activity by showing its rationality.

This is partly due, again, to the isolation of higher education from common school education. Those who have prepared for college have conquered their prejudices and yielded to the demands of the higher course. Training has obliterated the traces of protest which might some time have burst forth. Hence the justification of the college curriculum is not undertaken, but left a tenet of blind faith. It is true, a few traditional grounds are stated in a somewhat mechanical manner. Discipline, culture, accuracy of thought, and expression—these are the stock arguments in favor of classical study.

With a view to a more thorough examination of these points I have ventured to discuss them here in their psychological bearings. It is essentially a psychological question. What influence on the mind have these studies? What peculiar influence arises from the study of Latin and Greek that the modern languages do not exert upon the scholar? What is the definite meaning of the words "discipline," "culture," "exactness of thought," "refining influence," when applied to the results of classical study, or what is the ground on which these languages are called "perfect"?

The Latin and Greek languages are spoken of as being "perfect" in the sense of completeness as regards further growth, or as regards etymological inflections, or as regards syntactical organism, or, finally, as regards capability of expression, whether artistic, scientific, or historical. This latter designation ("perfect") does not seem to recommend itself as a substantial reason for the prominent place Latin and Greek hold in education. In the first sense, as complete in respect to growth, they would have no advantage over the Anglo-Saxon, the old Norse, the Zend, the Sanscrit, or any other dead language. Nor is it obvious at first glance why such completeness is an advantage. Why should we not rather study a living, organic growth, wherein we can trace a process actually going on? Laws are manifested only in transitions from one stage to another. Again, if inflections are considered, what thoughtful man will assert that inflections are a mark of perfection? Is the Sanscrit more perfect than the Latin or Greek because it inflects twice as much as the latter? Does not maturity of spiritual development do away with inflections? Could the syntax of Greek or

Latin do any more wonderful things than the syntax of Milton or Shakespeare? Could the language of Cicero express what that of Burke could not, or that of Plato and Aristotle express what Hegel and Schelling found German inadequate to do? It is doubtful if any of these questions could be answered in such a way as to defend Latin and Greek on the ground of a superior degree of perfection over all other languages.

But there are better grounds for the support of classical study. As subsidiary reason for the study of Latin one may name its importance to the English-speaking people on account of the fact that it furnishes the root words to that part of our vocabulary which is more especially the language of thought and reflection, while the Teutonic or Gothic groundwork is the language of the sensuous experience and of common life. Hence it happens that even a little study of Latin makes a great difference in the grasp of the mind as regards generalization and principles. Without Latin the trope and metaphor underlying the abstract terms necessary to express all elevated sentiment or thought in English, and more specifically all scientific results—whether moral, legal, spiritual, or natural—is not perceived nor felt. Such trope or metaphor is the basis of abstract terms, and hence the latter have been called “fossil poetry.” To gain command of the resources of a language one must revivify this poetic element, must acquire a feeling of the trope and metaphor which it contains.

This argument for the study of Latin by English-speaking people holds good in a greater or less degree for the Romanic nations of modern times. But it is not so convincing when applied to the Germanic, Norse, and Slavonic peoples. It is when we come to look the question earnestly in the face, as applied to all European culture, that we begin to see its truer and deeper psychological bearing.

I have already quoted the remark of Schopenhauer that—

A man who does not understand Latin is like one who walks through a beautiful region in a fog; his horizon is very close to him. He sees only the nearest things clearly, and a few steps away from him the outlines of everything become indistinct or wholly lost. But the horizon of the Latin scholar extends far and wide through the centuries of modern history, the middle ages, and antiquity.

Here we have the essential kernel of the matter hinted at under a figure of speech.

The object of education in the school should be to clear up the mind and give substance and discipline to its powers. To attain to clearness there is but one way—the student, engrossed in his little world of opinions and caprices, must learn the presuppositions of his being and activity. The individual looks out from his narrow environs in the now and here and sees that he is what he is mostly through conventionality. He does this or that because others do it; he acquired the habit when a child and has never questioned its rationality. His family and immediate circle of acquaintances have given him his habits of

thinking and acting. He looks further and sees that the community in which he lives is governed likewise by use and wont. Tradition is the chief factor; accidental modifications of time and place enter as a less important factor; another factor in the result is the law of development or evolution, wherein he sees a gradual change ensuing from internal growth. Through observation of this latter fact—that of evolution—he is carried at once beyond his community and beyond all contemporary communities. He begins to trace the historic evolution of his own civilization out of the past. Out of the formless void of his consciousness there begin to arise some intimations of his whereabouts, and whence and whither.

Even the most materialistic science of our time hastens to caution us that we should never seek to know the individual by isolating him from his conditions. To know an individual thing scientifically, we must study it in its history. It is a part of a process. Its presuppositions are needed to make it intelligible. Only in the perspective of its history can we see it so as to comprehend it as a whole.

If a man does not know nor feel his existence, he can not be said to live it as an independent existence. The humblest piece of dirt beneath our feet pulsates with vibrations that have traveled hither from the farthest star. But the clod does not know nor feel its community with the universe of matter. That universe does not exist for the clod; consequently the clod does not exist for itself. When we learn to know our entire being it exists for us, and therein we come to exist for ourselves. It is conscious communion with one's existence that makes it one's own. The more complete the consciousness the higher and more personal the being. The man who does not know his history nor the history of his civilization, does not consciously possess himself. His existence, as involved in those presuppositions, is not for him, is hence unassimilated, and therefore exists as his fate and not as his freedom. The first requisite for directive power is knowledge. Directive intelligence, knowledge itself, may ceaselessly modify the effects of its presuppositions as it finds them on itself, and by successive acts of the will may determine itself in accordance with its pure ideal. This is freedom.

When the scholar learns his presuppositions and sees the evolution afar off of the elements that have come down to him and entered his being—elements that form his life and make the conditions which surround him and furnish the instrumentalities which he must wield—then he begins to know how much his being involves, and in the consciousness of this he begins to be somebody in real earnest. He begins to find himself. The empty consciousness fills with substance—with its own proper substance; it subsumes its particular being under the general self which it finds to be its true being; it “stands under” itself; rises from a particular special form of being to a generic, universal form thereof, which may be called culture.

Thus for ages the mind of youth has been trained in the schools on the two "dead languages," Latin and Greek. For the evolution of the civilization in which we live and move and have our being issued through Greece and Rome on its way to us. We kindled the torches of our institutions—of the watchfires of our civilization—at their sacred flames. The organism of the State, the invention of the forms in which man may live in a civil community and enjoy municipal and personal rights—these trace their descent in a direct line from Rome and were indigenous to the people that spoke Latin. In our civil and political forms we live Roman life to-day. That side or phase of the complex organism of modern civilization is Roman. Our scientific and æsthetic forms come from beyond Rome; they speak the language of their Greek home to this very day, just as much as jurisprudence and legislation pronounce their edicts in Roman words. Religion points through Greece and Rome to a beyond in Judea for a still deeper spiritual presupposition.

To assimilate this antecedent stage of existence it is not sufficient to form an acquaintance with it by reading its history or literature in translations. The thorough assimilation of it in consciousness demands such an immediate contact with it as one gets by learning the languages of those people—the clothing of their inmost spiritual selves. We must don the garb in which they thought and spoke in order to fully realize in ourselves these embryonic stages of our civilization. For we know truly what we have lived through. We must live it in our dispositions or feelings, then realize the forms which it takes on in the phantasy, i. e., its art forms, and finally seize it in the abstract conceptions of the understanding and grasp its highest syntheses in the principles of the reason. The earlier stages, that of feeling and that of phantasy, can be reached best through the natural symbolism of the word. Each national spirit reveals itself to itself in its own way by its language. Translation loses this peculiar element of feeling, although it retains the higher rational element. But in the present instance it is essential to retain precisely the immediate, naive, germinal "cell growth" of those national spirits whose results we have assimilated.

From the modern scientific idea of method—even that called Darwinism—we see the absolute necessity of mastering our history in order to know ourselves. We must take up into our consciousness our presupposition before we can be in a condition to achieve practical freedom. Just as the uncultivated person feels and knows his narrow circle of sensations, desires, appetites, and volitions as his personal existence, his "ego," so the man of culture recognizes his identity with the vast complex of civilization, with the long travail of human history:

"He omnipresent is,
All round himself he lies,
Osiris spread abroad,
Upstaring in all eyes."

For he looks at himself through the eyes of mankind and sees himself in mankind. History is the revelation of what is potentially in each man.

We may now inquire what aspect the question of the substitution of a modern language—say German or French—for Latin or Greek has. Is it not clear that a modern language stands to English in the relation of coordination and not in any sense in that of a presupposition? As immediate facts, German and French stand in need of explanation through evolution, just as much as the English does. Their civilizations are not embryonic stages of English civilization, but rather repetitions of it. To suggest a study of German or French as a substitute for Latin or Greek would be paralleled in the science of zoology by suggesting a study of snakes instead of tadpoles in the embryology of the frog.

Greece and Rome stand at the entrance to the modern world or the occidental phase in world history. Greece introduces the idea of individuality into history in place of the oriental idea of substance. Rome deepens the idea of individuality to that of legal person. Both nations conquered the Orient. First, Greece, under Alexander, avenged its wrongs, long suffered at the hand of Persia, by subduing Asia Minor, Syria, Egypt, Persia proper, Bactria, and western India. The Greek kingdoms in Asia Minor and Egypt were for centuries the seats of science. The Greek kingdoms in Syria and Bactria—no one knows how much the East Indians and Chinese owe to them in the way of scraps of science and art.

Then Rome brought under her yoke the western and northern barbarians, rooted out Carthage, and extended her sway to the east over Greece and the Greek empires temporarily. The great modern States were born in the Roman colonies of the west, and were nurtured under her civil code of laws and with such Greek refinement as followed in the wake of Roman wealth and might. Finally, Christianity, sheltered under the Roman eagle, found its way to all lands that were destined to enter modern civilization, and under the threefold nurture of Roman laws, Greek science, and Christianity the long education went on toward national independence and a humanitarian civilization.

Discipline, culture, exactness of thought, refining influence are, in a special sense, results of classical study, inasmuch as it alone furnishes a direct road to the conscious possession of the conventionalities of our civilization. Greek gives the presuppositions of the theoretical intelligence; Latin that of the practical (or will side) of the intelligence. Mere disciplined ability to give attention to a subject connectedly is not adequate to give culture or exactness of thought. Mathematical drill suffices for that sort of discipline, but it is accompanied with the mental habit of abstracting from and ignoring quality or the concrete relations of the most important of subjects—human life.

Why the argument in favor of Latin and Greek in education does not apply to oriental presuppositions beyond them may be asked. The reply is twofold. The most important of the presuppositions mentioned, the theoretical and practical, are indigenous with those two peoples—the former with Greece, the latter with Rome. Oriental presupposition appears in Greece as the basis of myths and of the religious mysteries. The myths represent the overthrow of the doctrine of substance by spiritual might—the Titans by the gods of Olympus—Asiatic fate by European free personality.

The Roman presupposition appears still less to be derived from the Orient. It is not in any proper sense to be regarded as a reaction against the Orient, although Greece is such a reaction. The presupposition of Christianity is, however, found in the Orient, in Judaism, and this fact is sufficiently emphasized in that part of our education which is left to the church. The spiritual elements embodied in religion are far more subtle than those we have just considered. But their discussion does not belong here.

With this hasty survey of the most important and most hotly contested question in higher education, let us approach the theme whose discussion is to throw light on the true relation of colleges and universities to the public schools.

THE COURSE OF STUDY.

To discover precisely what the pupil gets from studying a particular branch—what he adds to his mental structure in the way of discipline and knowledge—is one of the problems of educational psychology. Without determining accurately the value of a given study by ascertaining what the pupil is to gain from it in the way of information that shall make clear his view of life or in the way of discipline that shall increase his strength to grapple with other problems, the educator is not in a condition to decide where it belongs in the course of study or how much time it demands. Indeed, it may be said that the want of such preliminary investigation has injured our educational system and is injuring it fully as much as all other causes combined. It is owing to the lack of psychological insight that we have so many changes in theories and systems, so much advocacy of one-sided extremes. Caprice and arbitrariness determine the choice of this or that study. The likes and dislikes of the teacher settle the course of the pupil; the whim of the parent is allowed to do the same thing.

We have just seen some of the psychological grounds for the large place classical study holds in the curriculum of our higher education. When Latin was the language of the learned, its paramount importance in education was not questioned. It is at first somewhat surprising to discover that it is still the language of the learned who speak English, for the reason that the vocabulary of science, of refined culture, and of abstract thought or generalization, is nearly all of Latin

derivation. But more important than this is the subtle spiritual gain derived from the increase of mental strength to analyze and combine the elements of human interests—still more important, the clearing up of the view of human life, the certainty of conviction obtained by the contemplation of human nature in its evolution through long intervals of time.

Our inquiry will lead us to investigate the twofold division of branches in the course of study into disciplinary and information-giving ones. We shall find both classes of studies in the elementary branches taught in common schools, and likewise in the more advanced studies of the high school and college. What psychology teaches us in regard to the elementary branches must be seen first. In its light we can then discuss the continuation of the same by the high school and college. We can also decide the extent to which the desire of discipline or information should lead us in selecting the branches to be pursued. The "elementary branches" alluded to are—

- I. Reading and writing—the mastery of letters.
- II. Arithmetic—the mastery of number.
- III. Geography—the mastery over place.
- IV. Grammar—the mastery over the word.
- V. History—the mastery over time.

In order to show the exhaustiveness with which these studies occupy the field, both subjectively and objectively, let us reclassify these studies under a new order.

The theoretic survey of the world (and intellectual education must undertake to give this) reaches into two realms—the world of matter or nature, the world of humanity or spirit. Theoretically considered, nature falls into inorganic or organic, and the sciences corresponding to these are physics and natural history. Physics (including chemistry) treats of the inorganic phases of nature, all of which may be treated mathematically or quantitatively. Natural history treats nature's organic phases: meteorology, geology, botany, zoology, and ethnology. Meteorology can not strictly be called organic, neither can geology. But the former is a circular movement, a process which moves in cycles. Moreover, it conditions all organic life through its cycles, and is therefore studied in connection with the latter in physical geography. Geology may be called the "Earth organism" (the Germans thus name it), and it treats of the organic process of the globe—using organic as more general than the term "living." Mathematics determines the abstract *a priori* laws of time and space. Time and space are the abstract logical conditions of nature. Mathematics is the general preliminary science of nature, which fixes and defines the conditions of nature in the abstract. Mathematics, physics, and (organics or) natural history form the theory of nature, the first and second (mathematics and physics) treating nature analytically or by elements; the third treating nature synthetically, as exhibited in organic forms or cyclical processes.

The world of humanity or spirit is distinguished from that of nature by means of this mark or characteristic: It everywhere is self-determined by a conscious purpose, while mere nature obeys laws unconsciously. Spirit is an end to itself. Nature's forms are ruled and swayed by external ends. By "external" ends I mean purposes, designs, or objects which are not consciously formed in thought—not self-proposed by the being whose end and aim they express. Man can form for himself a purpose. He can think his own final cause, and he alone can think out and discover the final cause of a merely natural being, an unconscious being.

The theory of man includes three phases: (1) Theory of man as a practical being, a will power, a moral being acting socially and politically, a history maker. (2) Theory of man as a theoretical being, a thinking power, a rational being, giving an account to itself of the world and itself—in short, a science maker. (3) Theory of man as an artist, or as a being that represents or portrays himself, embodies his ideal in real forms, makes the visible world into his own image—in short, as the producer of art and literature. (A fourth sphere—that of religion, the obverse of art, a realm wherein man strives to elevate himself above all visible forms to the absolute ideal through devotion and worship—will occur to the thoughtful classifier. It is so important that it belongs to an education apart from the rest, a sacred education to be found within the church, and not side by side with other branches in secular education.)

To tabulate our results, we find for the total theoretic survey of the world the following:

Nature	{	I. <i>Inorganic</i>	{ Mathematics. Physics (and chemistry).
	{	II. <i>Organic</i>	Natural history.*
Man or spirit	{	III. <i>Theoretical or thinking power.</i>	{ Logic, philosophy, philology.
	{	IV. <i>Practical or will power.</i>	{ Civil history, social and political sciences.
	{	V. <i>Æsthetic or art power</i>	Literature and art.

The two worlds—the macrocosm and the microcosm—here fall under five general divisions, as seen in the above general review.

Our elementary branches distribute according to this general survey as follows:

- I. Nature inorganic—arithmetic.
- II. Nature organic—geography.
- III. Man—theoretical—grammar.
- IV. Man—practical—history.
- V. Man—æsthetic—reading (literature).

* Including whatever is a circular movement or cyclical process; hence the stars, meteorological process, geological structure, the plant and animal.

That these branches lie at the basis, and open first and directly out of the mind upon the world, will be evident upon a little consideration. It will also become clear that these are the only branches which lie directly at the door of the uncultivated mind.

I. Arithmetic quantifies. By its mastery, man to a great degree obtains theoretical dominion over time and space, and by it he can formulate the entire inorganic world. The Pythagoreans valued its disciplinary significance in that it is the first elevation above what is merely sensuous—an elevation through abstraction from particular quality. The mastery over number opens the window of the mind upon the world of quantity, giving one power to a certain extent to recognize and fix theoretically all quantity. From this study branch out the higher mathematics and physics.

II. Geography localizes. By its mastery man comes to realize his spatial relation to the rest of the world. As civilized man the supply of his wants of food, clothing, and shelter is a perpetual geographical process realized through the division of labor and commercial exchange. By this geographical relation each individual becomes participant in the entire production of the globe and in turn contributes to all. In geography the child learns this fact of interdependence and community, which is, even when known particularly and not generalized by him, of the greatest possible importance as a category in his thinking or view of the world. It is the second window of the mind. Through it he learns the organic world and its relations to the human race and to himself individually. Climate (meteorology), surface (geology), plants (botany), animals (zoology), man (ethnology, sociology, political and religious forms to some extent) are the topics to which he is introduced, and these are general categories or "tools of thought" whose mastery give him great vantage ground; think of him as not possessed of these distinctions in his mind and see what imbecility in dealing with the world would result. Shut up the geographical window of the soul and what darkness ensues! From this study branch out in higher education the special organic sciences indicated in the parentheses above used.

III. Grammar fixes and defines speech. By its mastery man obtains the first mastery over his mind as an instrument. To grammar belong reading and writing considered as orthography. And grammar in this aspect is the first study in school and the most powerful lever for all development of what is human. It is the key to all that is spiritual. By the arts of reading and writing or orthography man issues forth from the circumscribed life of the senses in which he is confined to his own immediate experience and to that of his small circle of acquaintances. He issues forth into the world revealed through the printed page—a world extending as wide as the human race and deep into time, as deep as the earliest hieroglyphics will lead him. The library opens to him and he can now use all the senses of all mankind, for their

observations have been reported; he can use their thoughts and feelings, for these also have been reported. His own five senses, used unaided, would take him but little way in beholding the spectacle of the universe. But by means of this auxiliary of orthography he can supplement his finite being by the human race and he thereby comes into an infinite heritage. Grammar as etymology and syntax initiates the pupil into the general forms of thought itself. Thus there branch out logic, psychology, and metaphysics, as well as the various phases of philosophy. Has it not been said indeed that the father of logic discovered its forms through grammar. Under a thin veil the pupil deals with pure thought when he studies syntax.

IV. History deals with human progress and process. By its mastery the child learns to recognize his presuppositions—his existence as continued into the past. The precedent conditions are a part and parcel of his existence, just as the distant spatial conditions belong to his aggregate social conditions, as he learns in geography. As family and a nation, his existence is spread out in time; as a social being, it is spread out in space. History opens the fourth important window of the soul. It looks upon deeds and events, chiefly the former. Man, as a will power, unfolds his nature in successive deeds, and thence in time, and hence in history. From history branch out the practical or will sciences—jurisprudence, politics, and sociology, in the latter sharing with descriptive geography the same theme.

V. Reading, when carried beyond orthography, wherein it is a department of grammar, includes the mastery of literature, which is the highest realm of aesthetics. Poetry, the drama, and prose fiction lead into all art realms. Art portrays, in one shape or another, the collisions which the individual encounters in solving the problem of life; the collision with the ethical and moral and religious, and the collision of the ethical against the moral and religious, as when the edict of the state and moral or religious conviction collide; or, finally, when the inclination of the individual (love, hate, etc.), collides with fate or circumstances.

These five elementary branches are exhaustive, so far as including an initiation into every phase of nature and spirit. No one would leave out any of these from the common school curriculum. It remains, therefore, for us, in carrying up this education to its higher spheres, to retain its exhaustiveness, and not suffer any sphere to drop away unrepresented. In the high school course, these five departments are continued and reinforced in the following manner:

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|----------------------|---|-------------------------------------------------------------------------------------------------------------------------|
| I. Inorganic nature. | { | (a) Algebra.
(b) Geometry and trigonometry.
(c) Analytical geometry.
(d) Natural philosophy.
(e) Chemistry. |
|----------------------|---|-------------------------------------------------------------------------------------------------------------------------|

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|------------------------|---|---------------------------------------------------|
| | { | (a) Physical geography. |
| | { | (b) Astronomy. |
| II. Organic nature.. | { | (c) Botany. |
| | { | (d) Physiology. |
| | { | (e) Zoology. |
| III. Theoretical man.. | { | (a) Philology, Latin and Greek, French or German. |
| | { | (b) Mental and moral philosophy. |
| IV. Practical man.... | { | (a) Universal history. |
| | { | (b) Constitution of United States. |
| V. Æsthetical man.. | { | (a) History of English literature. |
| | { | (b) Shakespeare (or some special author). |
| | { | (c) Rhetoricals (declamation and composition). |
| | { | (d) Drawing. |

With so extended a curriculum for the high school, each one of the five departments of human culture being filled with what belongs to it most directly, it is impossible in its four years' course to accomplish as much in the departments of Latin and Greek as is required of those preparatory schools which concentrate their whole energies on the classics even to the neglect of higher mathematics. But in the mathematics greater advance will be made than is required for admission to college at present. So in natural sciences the general compends—(1) natural philosophy, including an outline of the sciences of inorganic nature; (2) physical geography, including an outline of the sciences of organic nature and of cyclical nature—these general compends will be mastered, and with them the general technics and the general ideas of all natural science. Some special sciences, like botany, zoology, or physiology, may be studied for the further investigation of methods. English literature, in its history and examples, will be studied to good purpose, and the special study of Shakespeare, the greatest of literary men, will serve to give the pupil insight into the nature of artistic work. History of the United States is studied in the district school. The outline of universal history is completed in the high school. The Constitution of the United States is the best discipline for the initiation of the pupil into the legal style and into the constitutional form for political organisms. The triune form, which there has its best example, is the type of state organisms, of municipal organisms, and to some extent even of corporate organisms. In a country where every person, without exception, is necessarily brought into relation with various forms of its realization, and is likely to be called upon to assist in organizing such, it is highly important that all should be taught thoroughly this archetype of our governmental forms. Accordingly, in the district schools, he studies its outlines with special reference to the coordination of its three separate functions. In the high school he studies it in its details and practical functions, and with it studies also parliamentary law. Some time is given to the outlines of philosophy, moral and mental, and their history, in the high school.

What is the course of study for the succeeding four years which the college and university occupy? The high school furnishes its pupils with less preparation in the classics, and considerably more preparation in all other branches. The college course that should adapt itself to the public school system must demand less preparation in the classics, but require one modern language; about the same in mathematics (i. e., all of algebra, geometry, and trigonometry); more in natural science, history, and literature. It would then be able to begin mathematics, in freshman year, with analytical geometry, and require all to take the differential and integral calculus in the regular course, leaving to the list of elective studies the remaining mathematics. In natural science there should be a continuation of the study of inorganic nature by special branches, and a more thorough application of mathematics to the same; organic nature also should be taught by special branches. The ordinary course in Greek and Latin for two years must be strictly followed, and, after that, made elective; comparative philology should be made a required study for a year. Logic, history of speculative philosophy, and the thorough study of the system of one of the greatest philosophers, together with a criticism of the latest philosophic movements of the day should belong to the required course, leaving further studies of this class to the elective list. Lectures on the philosophy of history, of literature, art, science, etc., should begin early and continue throughout the course—not frequently, but at intervals. The practice of crowding into the senior year all of this matter does not find the students prepared by growth for philosophical generalization, nor acquainted with its technique. Advance views can not be communicated or acquired unless the basis of quiet assimilation has been prepared. Time is indispensable for the growth of the deep thinker. To use two or three years of the college course in learning Latin, Greek, and mathematics without attempting any generalization of the results does not prepare the pupil to enter into such generalizations, but rather confirms in him a doubt as to their possibility. No wonder that so many students graduate unable to refute the shallow sophisms with which the air is filled by thinkers of the second stage of culture in thought, when they ought to have mastered the third stage of thinking in college, or at least to have learned that there is such a stage and that all the greatest names in philosophy, from Aristotle down, have worked in it, and, more than all this, that on the third stage alone are found all positive justifications of institutions and all insight into their nature. The study of literature, art, social science, politics, law, ethnology, philology, universal history, and psychology should be conducted through lectures on their philosophy, and accompanied by recitation work in special provinces for the sake of illustration of practical method in investigation.

How much should be elective in the college course and what should be required of all? Those studies which have a direct bearing on the

discipline and insight of the scholar should not be placed on the list of electives. At least, if it is necessary to establish the institution on a basis that permits one to choose any or all of the branches, it is very important to include all the branches essential to discipline and insight in the list required for a degree. I am in favor of excluding elective studies from the high school altogether. The "classical course," so called, is adopted in order to meet the requirements of the college in preparatory work. A "general course" is made out side by side with the "classical" course, and neither course is in harmony with the public school system nor with sound psychological principles.

Those who are to "finish their education" with the high school course are the very ones who need a share of classical study. Classical study is not merely a preparation for higher study, as Latin might have been when it was studied in order to learn how to read the "language of the learned," who wrote all their books in it. If a pupil were to remain only one year in the high school he ought, by all means, to study Latin during that time; it will come the nearest of all his studies to endowing him with a new faculty—with a new power of insight.

In the district school course each of the branches named is essential to the culture of the child, and it does not matter whether his course is to be one year or three years or ten years or twenty years. If he attends one year he learns to read and write and count—nothing else so important as these arts to him, for they open the doors of the spiritual universe to him and the keys can never be taken away from him. In three years he perfects himself in reading, writing, the elements of arithmetic, and learns the outlines of geography. What other branch can be compared with one of these at this period? Botany? Drawing? What is botany to the boy who can not read or write or count, or who knows not his relation to the earth on which he lives? What is the art of drawing compared with the art of writing? The degree of universality is the test to apply in settling such questions. But botany and drawing need not be wholly banished from even the primary school. The branches being divided into disciplinary, insight giving, information giving, and technical-skill giving, the two former are to be regarded as essentials, and perhaps four-fifths of the time in school devoted to them; the latter deserve their place, and if one-fifth of the time be given them they reenforce the other branches. In St. Louis natural science is taught in oral lessons one hour a week—the lesson being given on Wednesday afternoon. The pupils are not required to prepare their lessons; they are only to listen attentively and participate actively when called upon by the teacher for their experience. They are to be interested, and no constraint is to be exercised except to secure respectful attention. I have found that the information obtained in these lessons makes its appearance especially in the geography lessons. The one lesson of the week that is devoid of constraint and contains a range of topics and explanations suited to gratify childish curi-

osity I believe to be very valuable—at least far more valuable than the same time devoted to arithmetic or reading. I can not say that two hours per week used in this way would be as valuable as one hour, while its inroads on the other studies would be felt to their injury. Confined to one lesson, it aids the others by reaction, while the information gradually amassed is of immediate value and of still greater indirect value in preparing the mind for the exhaustive comprehension of nature in the high school or college. It is the active feeling and phantasy of the child that does most; his senses and reflection are roused by those unconscious movements of his soul. Hence, what he can tell directly about the subjects of his lessons may not be very much or very coherent, yet his spirit of investigation and the conviction that all natural phenomena can be explained is of great consequence to his after life. Drawing, again, is the only study tending directly to cultivate the hand and eye—a sort of universal skill-developing study. A short time each day can be spent on drawing better than not, for it is a rest from the discipline studies.

In the high school and in the college the course of study should still be carried on in certain studies with a view to discipline the mind severely, and in others to give the first initiatory course, laying the foundation for what must grow several years before the teacher can venture to unfold the highest significance of it. It must be allowed to “soak” for its time. The philosophy of history, art, and literature can not be taught at once. Perhaps the first course is fortunate if it leaves a conscious conviction in the mind of the pupil that it is possible to have a philosophy of such things, the pupil not being able to give any rational account as yet of any piece of such philosophy. The descriptive phases of the sciences can be learned early. We have three cyclical movements in our natural-science course, each traversing the same round and covering the whole field, gradually increasing in minuteness and scientific precision. The course in the high school ought to prove more interesting and fruitful for the previous preparation, and it probably will when the present pupils in our lower grades reach that school.

Is not the highest problem of education how to liberate the genius of the pupil? If genius can not be created or developed it certainly needs liberation. It seems to me that a course of study which plants first in the feeling and phantasy and then gradually brings out through the reflection and reason the ideas of its contents will come nearest to the liberation of genius.

In conclusion I will present a diagram showing the order of unfolding the main topics in the course of study in the district schools, high schools, and colleges:

General course of study.

Class of school.	Topics relating to nature.		Topics relating to man, or "The humanities."		
	Inorganic.	Organic or cyclic.	Theoretical. (Intellect.)	Practical. (Will.)	Æsthetical. (Feeling and phantasy.)
District or "common."	Arithmetic. Oral lessons in natural philosophy.	Geography. Oral lessons in natural history.	Grammar. (Reading, writing, parsing, and analyzing.)	History (of United States).	Reading selections from English and American literature. Drawing.
High school.	Algebra. Geometry. Plane trigonometry. Analytical geometry. Natural philosophy. Chemistry.	Physical geography. Astronomy (descriptive). Botany or zoology. Physiology.	Latin. Greek. French or German. Mental and moral philosophy.	History (Universal). Constitution of the United States.	History of English literature. Shakespeare or some standard author (one or more whole works read). Rhetoricals (declamation and composition). Drawing.
College or university.	Analytical geometry. Spherical trigonometry. Differential and integral calculus. Physics. Chemistry. Astronomy. (Etc., elective.)	Anatomy and physiology. Botany. Zoology. Meteorology. Geology. Ethnology. (Etc., elective.)	Latin. Greek. French or German. Comparative philology. Logic. History of philosophy. Plato or Aristotle. Kant or Hegel.	Philosophy of History. Political economy and sociology. Civil and common law. Constitutional history. Natural theology and philosophy of religion.	Philosophy of art. History of literature. Rhetoric. The great masters compared in some of their greatest works: Homer, Sophocles, Dante, Shakespeare, Goethe, Phidias, Praxiteles, Sappho, Michael Angelo, Raphael, Mozart, Beethoven, etc.

REMARK.—It is understood that many topics named in the above can be replaced by other topics, which have the same psychological rank as studies.

CHAPTER XVI.

PUBLIC SCHOOLS DURING THE COLONIAL AND REVOLUTIONARY PERIOD IN THE UNITED STATES.

By Rev. A. D. MAYO, LL. D.

INTRODUCTION.

THE AMERICAN COMMON SCHOOL.

The author of this essay does not propose to write a detailed history of the American common school. This important work has been done, with various degrees of success, in a few valuable essays, including the complete and increasing number of volumes setting forth the local history of popular education in the several States of the Union. But the great storehouse of material for the final history of the American common school is still found in the 31 volumes of the American Journal of Education, edited by the first United States Commissioner of Education, Hon. Henry Barnard, LL.D., from 1855 to 1881; but now first really made accessible to the unprofessional reader through a complete analytical index, prepared under the direction of Hon. William T. Harris, the fourth United States Commissioner of Education. Here, as nowhere else, will be found the most elaborate and reliable record of the entire progress of universal education in the United States. Here also, prepared by the most competent authorities, are the earliest intelligible accounts given to our people of the educational systems of Europe. No other man of the illustrious company of American educators has prepared an educational chronicle of equal importance. Dr. Barnard was himself a conspicuous worker in the revolution of sixty years ago which inaugurated, in our country, the ideas and methods of what in popular phrase is known as "the new education." This venerable man has been spared to receive the tribute of the most celebrated educational authorities of all civilized countries to the supreme importance of his remarkable compilation and to rejoice in the final triumph of the American common school by its establishment in every State and Territory of the Republic. Once for all, the author of this treatise disclaims any pretension to originality in the investigation or arrangement of the innumerable details of this department of the national history. Without special reference or acknowledgment, he has drawn from the overabundance of material what suits his special purpose in telling the story of the American common school.

It will be our aim in the present essay, while briefly rehearsing this "great and wondrous story," to set before the 10,000,000 American youth of sufficient age to comprehend it, before the teachers of this "grand army" of the national reserve, and before the school authorities of every degree, and the educational public in general, some considerations of absolute importance to the welfare of the Republic.

(1) We desire to impress upon this portion of our people the fact that the American common school, in its present state of development, is the most original and vital product of the national life.

(2) We would show its fundamental relations to our democratic-republican Government and order of society; its profound influence thereon from the beginning of the colonial life; its formative power in the development of the early history of the new Republic; our dependence upon it, through every period, in the slow evolution of the country into its present estate for a corresponding enlargement and enlightenment of the most characteristic American society, and the absolute necessity that in all its essential ideas and methods of administration, it should be preserved, in the full measure of its present expansion, as the essential, conservative, and vitalizing agency in our American order of public and private affairs.

(3) We shall discuss incidentally the extent to which the methods of the organization and administration of popular education in foreign lands can be profitably copied in the reformation and perfecting of our own American common-school system. We shall also direct attention to the danger of an unreasonable and provincial resistance to the incoming of all improvements in the line of a genuine American development, and especially warn against that narrow spirit of localism and materialism which leaves a community at the mercy of specious and pretentious theories concerning the training of children and youth, essentially hostile to our American system of education and the fundamental ideas of the national life.

The American common school, in its present state of enlargement, extending from the kindergarten to the State university and the elaborate arrangement for industrial training, like everything in American affairs, has been the gradual creation of the American people from the earliest period of colonization. The educational ideas and organizations of our people have always and everywhere been among the most influential factors in the national development, from the early provincial notions of colonial society to the enlarged national ideals of the present hour. No vital portion of our republican order of society is of crude, hasty, or careless adoption.

The American common school has always been the most vital and influential element in the life of that portion of the country which first adopted it, and to-day is the most powerful agency in the civic, religious, social, industrial, literary, and home affairs of the entire Union. Each body of energetic and progressive European colonists who drifted to our New World brought the educational theories and methods of his own country more deeply embedded in its habits of life than any other reminiscence of its old home. The habit of training children and youth in the home, the church, and the school underlies even the powerful impulse for personal and political freedom. Indeed, this enthusiasm for liberty, when wrought out in practical activity, often turns out to be largely an obstinate assertion of absolute personal independence, with a sleepless jealousy of interference from any outward authority. But, underneath the most violent protest against even the essential restraints of republican Government lie embedded in the consciousness and habits, both of the superior and common order of these people, the old familiar system of youthful training through the type of schooling to which they have been accustomed at home.

The Dutch in New Amsterdam, the Puritans in New England, the French and Spanish populations of Louisiana, the Quakers, Germans, Scotch, and Irish of Pennsylvania, the Catholics and Hebrews of every State, struck out at first on the lines of the educational training to which they had been accustomed in the Old World. And, at a later period, the most persistent and formidable resistance to the present American common-school system has come from the European notions and habits of large bodies of recent immigrants of several nationalities. From the beginning the American system of popular education has been in a state of perpetual conflict with the convictions and habits of each of these numerous classes of people. Until the last fifty years the clergy of the different religious bodies were the actual leaders of every department of education. According to the convictions of the influential majority of the ecclesiastical class, education has been in the past the mental and religious training of children and youth into a zealous and faithful discipleship of one religious denomination. For this reason the absolute separation of church and state, though declared in the Constitution of the nation and of all the States, and everywhere

enacted into the legal code, has been delayed for a long period and resisted here as elsewhere.

So when the American common-school system of to-day is assailed as "a new departure," even a "perversion" of the original intent of its friends in colonial days, or a radical innovation upon the country district school of half a century ago, it may be replied that, like the growth of American Government and society, it has been a gradual evolution from the most profound convictions and practical experience of the American people. To no exclusive class or colony can we look for the complete ideal or the thorough working out of even the essential principles of the common school.

Education, in our American sense, is the training of a whole people for a worthy and effective manhood and womanhood as the soul of good citizenship. By its very nature it must be the most influential motive power of our civilization. Like all formative agencies, it must be of slow growth and often of imperfect and capricious manifestation. Religious creeds and politics may be modified, forms of government changed, fashions of society—even the habits of home life—upset, the industrial methods of Christendom revolutionized, new types of literary and artistic culture created, before this profound, slow-moving, conservative central power, the education of the coming generations, is essentially transformed. Every attempt to lift a people above the average training of the younger third of its population by the inspiration of a revolutionary upheaval or the semiinsanity of a popular social, industrial, or political revolt, will inevitably find its level on the common ground of the organized educational life.

Nowhere has the American people so plainly and persistently announced its ideal of republican society as in the people's common school.

For centuries before the colonization of Virginia, New York, and Massachusetts many of the elements of the present American system of popular education had been incorporated in the European school life of the period. Free schools had been supported by private beneficence, churches, corporate cities, industrial guilds, and religious orders in almost every nation in Europe. Some of the most valuable ideas and methods of mental and moral instruction and discipline were elaborated by the Jesuits, who for two centuries were the virtual educators of all classes on two continents. Like all valuable new departures in human affairs, the American common school at first included much of the spirit and largely adopted the prevailing methods of organization, administration, and instruction bequeathed to it from abroad.

But the one essential element that appeared at first in the New England colonies and has steadily grown in every American State and community to be its dominant characteristic is the idea that the whole American people claim the absolute right to use the accumulated public wealth to educate the entire body of children and youth into that type of mental, moral, and practical manhood and womanhood that culminates in good American citizenship.

To-day the plain American citizen in one respect is the most powerful sovereign on earth, for by casting his ballot he may elect a President of the United States, who for four years is, in more than one respect, the most powerful ruler among the nations, and nowhere is the opportunity and right of woman to make the man, who outwardly makes the Government, so acknowledged and exercised as in this Republic. The training of this American type of "sovereign citizen," the man who at once governs and obeys, is in no essential respects a subordinate matter. Not only the best discipline of the mind, but the schooling of the character and the union of both in the discipline of the executive faculties, is essential to the every-day life of the good citizen. Nothing less than this has been the ideal of the true educational class of the American people from the earliest day.

This lofty ideal—the training of a whole people, by the whole people, for the highest earthly position demanding the most complete manhood and womanhood—must be assumed in all just criticism of the past and present educational life of our country.

Here comes in the golden rule, announced in Italy, two generations ago to Washington Allston by Samuel Taylor Coleridge: "No man is competent to criticise the defects of a book or a work of art who does not comprehend its merits."

The country is now excited and the popular press almost monopolized by the wholesale criticism of experts in education, who seem never to have grasped this fundamental idea of the American common school or observed the steadfast, unrelenting way in which the American people, in every State, have wrought toward it and stood by it when obtained as the citadel of the nation's life.

So, when we are reminded that the voice of the people in education, as elsewhere, may not be the voice of God, the American people reply: We rely on every good agency of human society, working in the atmosphere of freedom, to generate and preserve that popular wisdom, virtue, and common sense which is the soul of all progressive civilization. Nowhere on earth and at no period of human history have the home, the church, social, industrial, and public life, and private schools of every grade, been so free to put forth their uttermost energy; nowhere is a wise, righteous, and efficient man or woman at the present hour so powerful for good as in this Republic. But at every crisis not only the most valuable but the only possible agency for training a new generation for sovereign citizenship in a Republic like ours is a common school, organized, governed, administered through representatives legally chosen by a flexible majority, which is for the time the agent of the popular will and is supported by the whole people. Though for the time this system of education shares the defects and can not rise above the high average of its creator and administrator, still it is the best and most helpful arrangement under the circumstances. For this is the theory on which the whole structure of American society stands, and its displacement as the chief corner stone of the common school-house would undermine the foundations of the Republic.

Nothing is easier than for an expert, influenced by the superficial order and smooth working of a system of national education, devised and administered by a despotic bureaucracy, to declare the American common school in its present condition unscientific, illogical, a realm of incapacity and disorder, and bring forth a recipe for its reconstruction. But this "short method" of dealing with the imperfections of a people toiling in the midst of the grand experiment of training a generation for sovereign citizenship fails completely of its purpose, inasmuch as it does not comprehend the characteristic method of our American republican civilization.

What to this expert appears the caprice of chance or the sign of decay is like the disorder of a great metropolitan city square in which a noble public building is being erected with its swarming multitude of workmen, its piles of debris, its litter of precious and common materials, its awkward, half-finished portions, giving no fit suggestion of the entire plan. These defects and crudities in the people's common school are more evident to its intelligent and responsible friends, who have "borne the burden and heat" of long years of public administration, than to the expert. But the best instructed of these practical schoolmen understand what the critic can not—the immense difficulty of doing anything well by the slow and tortuous method of educating public opinion and directing public administration.

They have learned to bear and forbear with much that at present is unsatisfactory and apparently pernicious; to be content to take in hand what comes first; not to expect that a work so great can be carried on with all of its departments abreast; to await the right time to achieve the least good result; to watch the happy moments and loftiest inspiration of the people for the accomplishment of the noblest ends, and often to be gratified with some genuine advance, though minute in comparison with the completed design.

It is one thing to elaborate a scheme of national education in a bureau of "great educators," itself the creature of a sovereign who at best represents a fixed order of society, which can only by slow advances avoid the chronic peril of revolution, and quite another for the foremost educational public of an American State to educate the political "dissolving view" we call a legislature into a reasonable and conscien-

tious apprehension of educational affairs. Much more difficult is it to save a good educational bill on its passage through such a body from the mischievous amendments and annexes of its ignorant, pretentious, or narrow-minded friends or from the insidious and untiring scheming of the foes of popular education. But all American experience demonstrates that this education of legislature, Congress, and court is one of the most hopeful factors in the nation's life. Year by year we behold, even in our great corrupt metropolitan cities, in States that for a century held the American common school at arm's length, in the least ambitious and most provincial rural districts, astonishing revivals of sound and progressive ideas. We see the flaring up of an irrepressible ambition to imitate the achievements of a more advanced community. We see the common people, even the freedmen first introduced to responsible citizenship, revolting against the cherished theories of the cultured class and exploding, in the wrath of one election day, the shrewdest plots of political, ecclesiastical, and social "rings" for the capture of the people's great heritage, the common school.

That man, or body of men, however exalted or established in their own convictions, who have only contempt and hatred for the American common school, even at its feeblest beginnings, or fancy that the mighty current of popular education can be fenced within the levees or diverted into the reservoirs of any system less comprehensive than the present, reckon without their host. Here, as everywhere in American affairs, the final verdict of 70,000,000 of people is better than the most scientific scheme of any clique in church, university, or partisan civic policy. And the one thing the people of the United States will not do, until a permanent majority concludes to adopt a different form of government, will be to intrust to any class, however well informed or apparently impartial, that absolute authority over popular educational affairs so attractive to a growing class of scholarly men in our own and every land.

To these and similar misapprehensions, both of the original intent and characteristic methods of administration that have already become a national conviction and habit in the conduct of the American common school, are we indebted for the persistent attempts to change essentially its type of character; sometimes by the earnest representatives of large and influential bodies of people. The demand that the American common-school system shall be changed to a federation of private, religious, and corporate institutions, loosely held together by an annual Government inspection and subsidy; or that, by some indirect arrangement, the old-time European parochial school shall become an annex to our national system of unsectarian moral instruction and discipline; the peremptory demand of certain university critics that the secondary, even the elementary, department of the common school shall be radically modified in order to weed out the superior few and speed their course to the doors of a college in no way responsible to the State and only indirectly influenced by the advance of educational thought and practice; the outcry from a considerable body of the patrons and teachers of private and denominational seminaries against the public support of the free high and normal schools and the State university; the almost brutal assault in great industrial centers upon every department of the common school that can not at once be brought inside the narrow circle of a materialistic so-called "practical" notion of the training of the average American child; the imperious demand that the administration of the common-school system, in all save its mere financial and economic details, shall be removed beyond the reach of the people whose children are its subjects and remanded to a body of scholars whose only known qualification is a loud and often insolent assertion of their own supreme capacity—these and other similar projects for the reformation and reconstruction of the system of universal education, slowly built up by the combined effort of the most eminent educators and foremost people of every order and condition, by the thought, observation, and experience of almost three centuries of American life, may sometimes be productive of good through the wakening and concentration of public attention on some acknowledged or insidious defect in the

working of our educational system. But no one of these theories can have a vital force in our educational training for good American citizenship until the present ideal of government and all things involved in the republican order of affairs is entirely changed in the deliberate convictions of a working majority of the people of the United States.

It is only a narrow literalism or an obstinate and almost invincible provincialism that insists on holding the American common school to the type of the fathers, or even to what seemed a finality to the educators of a generation ago. Whatever may be the truth in the political theory of "strict construction" in the written constitutions of States or of the nation, none but a confirmed educational pedant can deny the right and obligation of the American people to adjust the agencies and institutions that depend on their own voluntary activity to the expanding movements of national growth and the progress of civilization.

For, despite the assertion of all sorts of educational pundits who, in learned style, demonstrate that this or that right to educate the child is reserved to family and church and is altogether fenced off from public interference by the very constitution of human nature; yet now, as always since the dawn of civilization, every healthy, national life asserts the obligation to educate the growing generation for the functions of citizenship, and surely in our Republic, where there is no government save the annual expression of the will of the whole people, through methods created by and changeable by the people; where a system of public education by the state is only the people combining for the most practical method of doing an essentially good thing, it is evidently in the power of the state to expand the system of training for citizenship according to the growing demand of the common weal.

When we are referred to the old-time country district school of the early New England colonies, or the later seminary of the secondary or higher education as the just limit of state interference with the private or natural right of the parent to educate, we may well remember the changes that, like successive tidal waves of a revolution, have submerged the manners, customs, and entire habits of living of the least progressive of our American commonwealths within a short generation.

Perhaps the most notable of these changes is the declining power and influence of great men, even in political—much more in the religious—social, and industrial life of our American society. Two hundred years ago the virtual government of every American colony was, at best, in the hands of a small fraction of its people, and even they were dominated with almost imperial mastery by a very few eminent men. But the day has already passed when any man in public affairs can become the master of his country or swing a people as Bismarck and Gladstone in our time have turned about great masses of their countrymen. More and more is the nation and every State and community now ruled by the prodigious force of great combinations of people, representing an overwhelming public or private interest; their leaders are only the spokesmen of what appears to be the wise and right thing to the more intelligent mass below.

In such a condition of affairs, which is bound to become a confirmed national habit, it is little short of pedantic folly to insist on confining public education within the narrow lines of the common school, private academy, and denominational college of half a century ago. Worthy of all praise in their own day and generation for the great and good results they wrought in the development of the national life, they are now as incompetent to meet the people's greater need as the ox or mule team, the stagecoach, the one-horse plow, the log cabin, and the entire machinery and environment of the old American life would be to deal with the commercial, manufacturing, governmental, industrial, and domestic necessities of to-day. A century ago, even in America, it might be all that was possible to train up a small class of energetic and able men who, by sheer weight of character and public service, could force upon a distracted and half-indifferent people a constitution and form of government that remains still the admiration of the world. But to preserve that Government, to rise to and abide on that mount of vision occupied by the fathers,

requires now far more than the uttermost wisdom and patriotism of any body of statesmen. If our country is to remain the sort of Republic to which our foremost people aspire, it will be only when a permanent majority of the people becomes so much better, wiser, and more thoroughly trained in executive faculty than now that no statesman or party will fancy itself powerful enough to override the "sober second thought" of the constituency that has become the controlling force in public affairs. And if there is any other agency save a vast and beneficent system of popular education that will furnish that constituency, all the teaching of history is vain. If there is one truth established by the experience of mankind, in every age, under every form of government, it is that no set of men is able, sacred, or impartial enough to be long intrusted with the exclusive direction of a people's life. Whatever may be the inherent defects of popular government, it is the best school yet devised by man, under fit conditions and limitations, for securing that enjoyment of "life, liberty, and the pursuit of happiness," declared in our Declaration of Independence among the "natural and inalienable" human rights. And only by the successive broadening out of a national scheme that lifts the school above the domination of classes, castes, sects, and parties, into range with the best thought, life, and practical experience of a whole people, can these conditions and limitations of absolute personal independence be gradually established, without which even an American republic falls into the abyss of anarchy.

So it is not through heresy against any hard and fast divine scheme of training the child and informing the youth that the people's common school of this Republic has grown from its old-time modest pretension to a dominating influence in the national life. It has only responded to the rapidly growing demands of the American people for a system of common culture and discipline that shall occupy the great common territory outside and exclusive of all private, political, social, industrial, and sectional preserves and bring the children, though for only a few short years, together in an arrangement which, at its best, is the only possible rehearsal of the common relations and activities of citizenship in the new American life.

From these considerations we are prepared to estimate the value of the frequent declarations along more than one line of criticism that the American common school up to the present time has been, if not an absolute failure, a grievous and unnecessary disappointment to the people. The weight of this positive assertion depends, of course, on the ideal of the critic and the point of view from which the methods of our school organization, administration, instruction, and discipline are surveyed. It requires no extended observation to perceive that these critics judge the American common school from other ideals than that of the people who have established and still, in good faith, support it.

If the object of a system of popular education in this Republic be the production of a generation of zealous and active churchmen of the different religious sects; or of a body of youthful scholars, according to the severe tests of modern scholarships; or the sending forth of a multitude of boys and girls, from the age of 12 to 15, competent to practice a trade or push out at once on a career of successful self-support, or to produce a graduate to respond to anyone of a score of standards set up by the numerous critics of our present educational affairs, the cause of the common school would certainly go by default. The American people have never proposed either of these results as the ideal of its policy of universal education, although in no respect is the American common school indifferent or hostile to any of these precious interests. And if the critic assumes the possibility of any such all-embracing and all-compelling supervision of school administration by public officials, or despotic control of teachers by superintendents, as he finds in Continental Europe, he will not only be disappointed and disgusted, but may learn that he has quite mistaken the method by which any important public interest can be safely furthered in our country.

But if he will take the pains to study the genius, history, and achievements of the American people and its method of doing all good things during the past hundred

years, he can not resist the conclusion that least of all has the educational department of the national life been a failure or in any special way a disappointment. The ideal of the true educational public, which from the first has been responsible for the development of our common school, has been mental instruction and discipline, blended with moral and practical training. This, under the conditions of a republican order of society, will contribute to the peculiar style of manhood and womanhood essential to good American citizenship. It has not been regarded a wise educational or political policy to enslave the parent, to enforce the schooling of the child, or to do, by public edict, either of several things regarded as indispensable to the training of the subject of a European continental empire. The ideal has been to create and support a generous system of common schools, free to all, with somewhat better facilities every year, so attractive that every parent might be persuaded to use it for his children; to protect childhood at every point, and especially to secure to it the precious opportunity of elementary education, and keep it out of the clutches of the ignorant and vicious parent and brutal employer; to make that school a rehearsal of civic life, a place where vulgarity and vice shall be suppressed, and all "sorts and conditions" of youth taught to live under the benign protection of wise and just law; to awaken the mental faculties, impart essential information, discipline the powers of acquisition, and fling open the highways of learning, with reasonable incentive to superior ability and to the honorable ambition of all; to make every common schoolhouse a practical training school of virtuous manhood and womanhood, according to the loftiest standards of morality, by its very environment and atmosphere, the arrangement of courses of study, the hourly habits of the child and its established discipline; above all, by the influence of the character, "walk and conversation" of the teacher, to make him an object lesson of worthy manhood; by placing the children during their most impressible age under the direct charge of women, that the coming generation may share the most refining influences, thus prolonging the ministry of good motherhood to the verge of responsible youth; to develop the executive and personal faculty by including the industrial side of the new education, without exposing the child to the labor of learning a trade in infancy; in short, to enable the pupil to become intelligent without the pretense of expert scholarship; industrious and effective without becoming a professional workman; moral and religious without imposing the trammels of sectarianism; well informed in the history of his country and intensely patriotic without landing him in the slough of partisan politics—such a man or woman as the country needs more than all things else. This is the ideal that from the first, like the Star in the East, has gone before the people in their journey toward the Promised Land.

This is the people's ideal, in more than one respect original and comprehensive beyond that of any nation in the past or present. But in working toward this exalted purpose the American people have not deluded themselves with the fancy that all this is of immediate or other than gradual achievement. They remember that two long centuries of colonial life barely sufficed to hold the 3,000,000 of our early population together through the strain of an eight-years' war of independence and the more perilous era of the formation of general government; that even the original Constitution of the United States was the result of a compromise that left the two great rival ideas concerning the national integrity so obscured that, after seventy years of fierce agitation, the whole people flew to arms to solve the problem by "the dread arbitrament of war;" and that reconstruction, under an amended Constitution, after the destruction of society in sixteen Commonwealths, left on hand more than one open question more perilous than the controversies that have wrecked successive empires in the Old World. They realize how slow and tortuous and often disheartening has been the progress of the people out from the social semibarbarism, the terrible religious bigotry, the obstinate provincialism, and the rock-ribbed inclosures of nationality, class, and culture, from which the different bodies of immigrants have ascended to the broad uplands of the new national life.

They have not looked for miracles in educational progress and achievement in the working of their favorite institution, the common school. All that could reasonably be expected was the same gradual progress and increasing efficiency as in every other department of the national life. As the years have gone by, the people of every State, in succession, have shouldered new burdens at the call of their trusted educators, justified by their own observation of the importance of the emergency and the outcome of educational results.

And in view of this ideal and this method of development, seen to be the only possible way to the accomplishment of a work so vast as training the coming generation of American youth for American citizenship, who is prepared to say that the common school in all its grades has not scored a success corresponding to any department of the national life? What is better to-day and what has come up to its present estate with as few mishaps by the way as the common school? Have the politicians and statesmen, who sometimes affect to ignore and are always ready to offer positive opinions on the education of the people, done better with their record of contention? Have the theologians and ecclesiastics who, with an opportunity of boundless freedom and activity, are still at sea on effectual means of bringing the masses in range of the gospel, and are still arrayed in hostile, rival sects? Have the leaders of the labor movement, who seem to have found no method of bettering their constituency than a chronic state of warfare between labor and capital? Is it the magnates of the exchange, who confess that, under the present system, 80 per cent of the young men who enter business fail? Is it the leaders of society who, in the commercial metropolis of the Union, are posing in the absurd attempt to establish an upper caste of "400" on the basis of birth and wealth? Or have the science, literature, art, or even the higher education in our country, so far excelled the common school in satisfying the reasonable expectations of the people that their representatives can afford to ignore or denounce the people's seminary as an evident failure? And, pray, what record of great and good things done for the 20,000,000 of young America has the expert to show as his warrant to sentence all save a portion of the 350,000 common school teachers to a limbo of "unscientific" uselessness? Every professional, industrial, social, and political group of leaders in the country is to-day under a fire of criticism as contemptuous, remorseless, and positive as the educational public that is responsible for the common school. "There is none of them that doeth good; no, not one," is the verdict when tried by the Olympic type of judgment now affected by an infallible class in its estimation of the national schoolhouse. Yet, despite these manifold failures in the conduct of every great interest of the national life, the nation survives; the world moves; "old things pass away and all things become new;" and, by a method that no man fully understands, though every man must recognize, every department of American life is to-day on a broader, firmer, more intelligent, and humane basis than a generation ago.

What does all this signify, if not that, on the whole, the majority of honest and active workers in the foremost ranks of every great institution and agency of American civilization are learning, year by year, better ways of navigating the unknown sea of our new republican life? Nothing is at once so cheap, so tempting to half-knowledge and the conceit of all-round wisdom, inspired by special training in one corner of expert research, as the reckless habit of judging the movements of a whole people by the maneuverings, failures, and absurdities even of their chosen representative men. Yet it is by this type of criticism that the people's school is now assailed, often from quarters so influential and with such assumption of infallibility as sometimes to shake the faith of "the very elect."

But, after all just acknowledgment of the evident defects and incompleteness of the American system of universal education, he must indeed be a careless observer or quite gone in prejudice who can not look with thankfulness and a mighty hope on what is going on in the national schoolhouse, day by day, in the sight of all men. Is there really anything better done in the United States of America than this commonplace work of the teachers among the little children; correcting vulgar and

vicious habits; waking up drowsy or vagrant minds; reforming evil character; inspiring new hope in thousands hopeless before; sending forth increasing multitudes with a little higher aspiration for nobler living, more exalted position, or with a more reliable determination to be somebody and do something in the new American life?

It is easy enough for the walking expert to circulate through a hundred city school-rooms, dispose of their methods of instruction and discipline as antiquated or unscientific, remand their pupils to the limbo of the unwashed and condemn the entire system as a stupid pretense of education, sending forth a generation of children incompetent to help themselves. But why, then, do we find these same incompetent school boys and girls twenty years later swarming in all the avenues of American enterprise in the fore-front of every great and good cause, successful in business, enlarging and deepening the current of every art, occupation, and profession, devising and doing better things than any previous generation under thirty years of age this world has yet seen? Under all our pessimistic estimates that the country is on the edge of doom, as certain of the doleful doctors affirm, there must be some ever-present and effective cause for the prodigious growth in all directions, material and spiritual, that has lifted this Republic within the past thirty years in line with the greatest nationalities of the earth. That most powerful and permanent cause is the steady influence of the people's common school system in all its grades; not only through its own increasing efficiency, but through the corresponding growth of every department of educational life. The secondary, higher industrial and professional school; the new journalism; the Chautauqua assembly, summer institute and university extension; the improved public speaking; the whole side of life included in the vast arrangements for universal education—all these agencies and institutions have been greatly dependent upon the American common school through its revival of the new elementary education during the past half century. So, judging the future by the past, is it not safe to predict that through the years to come our beloved country must depend upon the same mighty formative agency, as powerful as the common air and sunlight and early and later rain, for the preservation, elevation, and growing toward perfection of all that shall make this Republic "that happy nation whose God is the Lord?"

In the first essay we propose to trace briefly the progress of the common school idea from its earliest appearance in New England; to trace the essays at popular education in all the colonies before the war of independence, and the first awakening of the whole people during the revolutionary period in the dedication of vast areas of public lands by Congress to the use of the children. The reader who comprehends the full significance of this period, which practically includes the first two centuries of American life, will not fail to discern in the educational ideas and achievements of the original thirteen colonies the prophecy and, in more than one essential feature, the realization of all that has been noted in the introduction of this essay as characteristic of the present American common school.

THE BEGINNINGS OF THE AMERICAN COMMON SCHOOL IN THE THIRTEEN COLONIES BEFORE THE WAR OF INDEPENDENCE, 1608-1776.

NEW ENGLAND.

The period of one hundred and sixty-eight years from the settlement of Virginia till the Declaration of Independence by the thirteen American colonies remains still, in some important respects, an unexplored historical realm. There is no special lack of material for the ordinary record of acts of Parliament and provincial legislatures, the doings of officials in church and state, the dismal chronicle of wars with the pagan and Christian enemies of the new settlements; especially for the tedious emphasis in the narratives of personal eccentricities, social extravagancies, and religious fanaticisms. But the one thing the thoughtful student of American his-

tory longs to know is the trend of thought and sentiment among the influential people of all these colonies which, half conscious to themselves and often quite apart from public expression, was the irresistible undertow sweeping all things toward the open sea of political independence, union, and republican nationality. Here alone can be found a sufficient explanation of the marvelous outbreak which, in 1776, attracted the attention of Christendom; of the successful revolt from the most powerful empire on the globe and the later establishment of a form of government which the foremost living European statesman has styled "the most memorable achievement of political wisdom in history."

Unfortunately, it is in this direction that the student of American history, from its beginnings in the early years of the seventeenth to the closing decade of the eighteenth century, finds least satisfaction. It does not help the thoughtful inquirer to plod through the regulation History of the United States, wherein a group of extempore demigods strikes into existence the world's great Republic. Just as little comfort is found in the wearisome wandering through the endless tangle of ante-revolutionary politics; wars, Indian or French, or the even more impassable wilderness of the early controversies of the contentious religious sects. We come nearer the core of the matter in a work like Prof. Moses Coit Tyler's admirable history of American literature. Still further light glimmers through the crevices in a book like the recent treatise of Mr. William B. Weedon, *The Early Industrial and Social Life of New England*. The Johns Hopkins University also gives hopeful outlook in a series of suggestive monographs on different phases of the colonial life. But the historian of American thought before the revolutionary epoch has not yet appeared, and the ambitious attempt at forcing this intense period of mental activity in the New World into conformity with a preconceived scientific or philosophic theory of civilization gives little satisfaction.

By the nature of the case, the materials for such an investigation must be meager. Of literature, in its general acceptance, there was next to none during the long reach of almost two centuries, when the colonial mind "went sounding on its dim and perilous way," pondering the mighty issues of the new life in its new home. The physical conditions of existence were all unfavorable to that intimate communion between, or even the frequent meeting together, of thoughtful people, out of which a dominating public opinion can be generated. The different colonies were really separate little nationalities, governed, led in social fashions, directed in their industries, and swayed or antagonized in their religious movements from across the sea. They were separated even more by the inevitable jealousies of their populations, representing in their widely different nationalities, creeds and classes, the rival, often hostile interests of their native countries. Democratic and concentrated New England, the cosmopolitan structure of society in the middle colonies, a British rural aristocracy intensified by the rising slave-power and provincial local pride along the Southern Atlantic Coast, made an almost hopeless condition for any save the most formal union forced upon all by the presence of a common danger. Besides, in communities so peculiar in their relations to a jealous and domineering home government, there grew up a habit of suppression of the most vital thought and speech by their best informed people until the very eve of revolt in open war.

Altogether, it remains one of the most difficult, as the most interesting, task yet open to the modern American historian to correctly map out the lines of thought, trace the half-formed plans, and indicate the prophetic expectations of these 3,000,000 people, which, like the under-world beneath the pavement of a great city, is at once a mystery to all save the expert engineer, although the only explanation of what we see above, in the daylight of its crowded life. But through the drifting mist of this realm of half knowledge, more evident with every generation from the earliest years, appears the remarkable phenomenon of the consolidation of society in the New England colonies. While every community beyond the Hudson River was distracted by the contentions of the rival elements of its population; unable to combine for the accomplishment of anything of special moment; in this bleak, far-

away corner of the half dozen little northeastern Puritan settlements, there was going on a steady process of combination for all social and civic results, by a people more pronounced in their individuality than any that came across the sea. If in human history another 20,000 people has ever been thus led apart by Providence and for two centuries kept out of elbow-touch with all antagonistic conditions, to accomplish a greater task of hard thinking, meanwhile toiling at the novel experiment of welding a race of men, the most original, obstinate, and self-asserting in personal opinions, into a state where all great common interests should walk abreast and every man become a vital part of a compact whole, its record has been lost.

Here lies the peculiar "faculty" of that wonderful New England civilization, often so exaggerated and misrepresented, even by its own historians, as an ideal condition of society. No people in history present more sharp and irritating points of repulsion to the critical observer, who fails to apprehend its "hiding place of power." That central characteristic to which, under God, this Republic owes so much was a positive genius for republican citizenship; the "saving common sense," below all the extremes of personal conviction, which enabled these little neighborhoods of obstinate, contentions, personally despotic, exceptionally able and intelligent folk to come together as by instinct and close up into communities in which no man would be a subject and no man could be a lord, a priest, or a king, but each, in his fit place, must be a "member of society" so vital that his casting out would dissolve the entire copartnership. A New England town of the old time was in no sense a confederation, but rather a blending of all into a new organism, wherein the individual gifts and powers of every citizen were wrought into the forces of a new society.

It was this perfect union and vitalization of the whole body of citizens in a common organism which gave to these towns and the Commonwealths into which they developed such a capacity for steady progress out of the narrowness, fanaticism, social despotism, and obstructive individualism with which they were originally burdened. Never before was the profound truth, announced in his inimitably characteristic way by Abraham Lincoln, "You can cheat some of the people all the time, and all the people some of the time, but you can't cheat all the people all the time," so demonstrated in history as in this original condition of New England society through the one hundred and fifty years before the war of independence. The nearest approach to the voice of God of which a fallible human organization is capable is along this open highway, surveyed by New England in these memorable years; the developing, expanding, perpetually "revised and corrected" verdict of a community of superior people, tried and tested in the solemn work of building a new civilization, burdened with the sense of a personal and social responsibility to Almighty God.

And the more we look for the innermost hiding place of this marvelous genius for republican civilization, we find it not in the policy of church or state, in the habits of society, or the methods of industry, though all these were the outcome of the radical conviction silently and persistently at work below. It was the conviction that every child born into this world is the child of God, capable of becoming a vital and useful member of society; and the corresponding obligation of the community to give to it the opportunity of that training at home, in the church, and in the school, which would send it forth at early manhood or womanhood a self-directing, competent person and a reputable citizen of a self-governed state.

This conviction was the corner stone of every respectable New England home, and explains the domestic life of that people as nothing else can. And out of the New England home, not from the church or state, but out of the very heart of the fatherhood and motherhood and childhood and youth of the home, was born the early New England school. It outwardly took on the form of the old English organization of education. It was largely under the influence of the church. But beneath these it was the firstborn child out of the deepest heart of Puritan New England. It first appeared at home, where the instruction was given by the parents or relatives, often

specially competent to teach in letters as in morals and manners. Gradually, in the neighborhood, it grew into the primitive country district school. Step by step it expanded into the grammar school and college. Before the first generation had passed away the colony of Massachusetts Bay virtually had on the ground, for the first time in human history, a system of public education over which neither state nor church nor municipality nor corporation nor the despotic personal control of private beneficence had full domination; where every responsible citizen was a working partner in the community or state that had burdened itself with the heavy responsibility of educating every child for worthy manhood and womanhood and competent citizenship by the combined agencies of private and public wealth. Here was the beginning of the American common school, the most precious and permanent gift to the Republic from the genius of New England, the stone for two hundred and fifty years so persistently "rejected by the builders" of other commonwealths, but, in these later days, now recognized as "the head of the corner," the corner stone of the new Republic that "can not be broken," but "upon whomsoever it shall fall it shall grind him to powder."

The failure to appreciate this peculiar union of all responsible people in a community to establish, govern, and stand behind private effort for the support of a school for all children, through the agency of an essentially democratic State, as the one distinctive feature of the American common-school system, accounts for the frequent suggestion that the early Dutch settlers of New York brought to the country the idea of this great national institution. Through the cloud of controversy that has recently gathered around the positive assertion of this proposition, like a summer morning fog on the Hudson River and bay of New York, a few incontrovertible facts appear, like the headlands of that superb region, overtopping the mist below.

(1) We observe that the United Netherlands, in the seventeenth century, did probably enjoy the distinction of the best-schooled population in Europe. But there is no reliable evidence that the system by which this was accomplished had its origin in or was dependent upon the initiative of the masses of the people. The schools of Holland were of various kinds. Until the Protestant Reformation they were largely in the hands of the Catholic priesthood; although, perhaps, of a more energetic and popular sort than elsewhere. The Reformation precipitated the memorable conflict between the states of Holland and Belgium and the Spanish Empire, which resulted in the existence for a period of what is called the Dutch Republic. This was a confederacy of the states of Holland, without a king, but still abiding in an intensely aristocratic form of society, in which the feudalism of the open country and the turbulent assertion of independence by the people of the cities made a political combination almost inconceivable in our own time. In these cities, through the agency of the Reformed Church, grants from the civic authorities, private donations, and the action of industrial guilds, supplemented by taxation imposed by the municipal governments, there came up, on the whole, the best opportunity for general culture yet offered to any European people. But as we leave the ranks of the superior class and come down to the masses of the people, we find little evidence of the enlightenment on which the advocates of the Dutch origin of the common school insist. Indeed, there is no positive proof that any but the most meager opportunity for elementary schooling was offered to the ordinary boy or girl of the humbler sort. Certainly there was nothing like the school system of the New England colonies in vogue even in Holland, when, in 1614, the West India Company, for trading with the Indians, established its three stations at New York, Rondout, and Albany.

(2) In this revival of learning there was no monopoly of interest in education by Holland. As early as 1567 the Scottish Presbyterian Church began its great work of educating the people, in which it persisted with such constancy that by 1696 there was nothing to boast above it in Europe, and the Scotch people have never fallen below Holland in this essential respect. In Germany, Sweden, and Geneva, everywhere among the reformed communities of Continental Europe, the revival of

learning and the disposition to carry the torch of knowledge down among the masses of the people was apparent. In Great Britain it took on the characteristic British method of coming up from the people, rather than descending from the national or municipal government. England was becoming well supplied with private and corporate grammar schools at the time of the Puritan migration. The leading men of this migrating body, itself the flower of middle-class intelligence, enterprise, and progressive ideas in ecclesiastical and civil polity, were the graduates of these schools and in an unusual degree had been students of the universities.

(3) Aside from the general influence of Holland upon the progressive class in England, which has probably been underrated, it is now asserted in the new literature of the subject originating from New York that the origin of the common school of the United States was the work of the Dutch settlers of the island of Manhattan. But there is no evidence that the early schools of the Massachusetts colony were in any special way imitations from the Dutch. In their organization, courses of study, and methods of discipline they were copies of the English schools in which their authors had been educated at home. The claim that the settlers of Plymouth brought the school system of Holland from their twelve years' residence at Leyden is disproved by every source of reliable historical information on the condition of these people. The little Puritan colony in Leyden was a forlorn band of foreigners, separated from the people around it by the barriers of language, a radical difference of church polity, a sleepless jealousy concerning the perversion of their children by the contagion of continental manners, and the longing for the dear English life left behind that always broods over the emigrant from the "sea-girt isle." It was the feeling that the original members of this company were growing old and unable longer to endure the strain of self-support; that their children were in danger of estrangement by what they regarded the loose examples around them; the irrepressible desire to establish a community of their own in "God's country" over the sea, that sent forth at first a detachment and afterwards the entire body of these people.

The somewhat equivocal connection of the one scholar of the body, Robinson, with the university of Leyden, evidently favored by his espousal of the illiberal side in the theological controversy that agitated it, has been worked for a good deal more than its worth in this matter. Moreover, the years of this occupation were among the most distracted in the history of the Netherlands. They were on the verge of a renewal of the awful struggle that tore away Belgium and, later, forced the Dutch Republic back into the fold of European monarchical states, where it still abides. And it is remarkable, if the Pilgrims brought the common school from Leyden to Plymouth in the hull of the Mayflower, that they let it "lie moldering in the grave" for fifty years, as the advocates of this theory assert, but actually fifteen years before a school was established in that colony.

Nothing but a strange misapprehension of the one distinguishing characteristic of the American common school, its origin from the people and growth, through the agency of the State by the support and administration of its creators, could transform the early parochial schools in the Dutch colony of New Amsterdam to the beginnings of the American common-school system. The famous school of the Dutch Reformed Church, established in 1633, was simply a parochial school whose teachers were appointed by the ecclesiastical officials; as certainly apart from popular origin, direction, and support as the Columbia University of the New York of the present day. Indeed, there had been in the Dutch settlements of the valley of the Hudson and Mohawk up to 1664, when the colony passed under the English control, no such thing as "popular sovereignty" until a few years previous, when, after a bitter contest, an ineffective popular participation in the management of public affairs was wrested from the despotic commercial corporation, the West India Company. The entire valley of the Hudson was settled, at first, on a tenure which was a very near approach to the expiring feudalism of central Europe. The tenant of the land had

no rights under a patroon, who was a virtual "lord of all power and might" in civil and ecclesiastical affairs. Even the right of appeal to the company at New York was commonly signed away on entering upon this relation. The education of the tenantry was absolutely dependent on the lord of the manor and the right was exercised according to his narrow or liberal views. And there is no proof that anything like the early schools of New England were found on these great estates. The little villages, even the principal towns, New York, Brooklyn, and Albany, where the best educational opportunities were enjoyed, had no such method of developing the educational life of a whole people as we find in communities like Boston, Dorchester, Roxbury, and all the leading towns of New England. Whatever of public support was given to these schools by the government of the company was withdrawn by the English authorities, on the ground that they were really parochial schools of the Dutch Reformed Church and taught in the Dutch language. The crowning evidence of this view is the fact that, though until the close of the eighteenth century the population of this entire district was largely of the original Dutch occupancy, there seems to have been no protest and no general movement for anything like the present common-school facilities. In 1800 there were only parochial and private schools in the city of New York, and the Public School Society was formed by eminent citizens to bring in the increasing number of children that were left out of school by this ineffectual method of instructing the masses. The occupation of this splendid valley by the Dutch as a company trading with the Indians, the original medieval tenure of the land by the early settlers, the obstinate contentions that rent the colony by the growing efforts of the masses of the people for representation in the government, the cosmopolitan character of the population, from the first, all made the establishment of any system like the present American common school a virtual impossibility.

So we are compelled to come back to the Massachusetts Colony on the Atlantic Coast for the beginning of the great American institution, the American common school. And for the full understanding of this fact we must take into consideration several indirect influences which, like the environment of climate, air, and the general habit of living, have a powerful influence upon the institutions of any people.

(1) We notice the intelligence of the early settlers of Plymouth, Massachusetts Bay, and of the two colonies, Connecticut and New Haven. The immigration of native-born Englishmen of the more progressive middle class; the class represented at home by Milton, Newton, and the illustrious men who later brought on the revolution of 1688—was confined to the twenty years between 1620 and 1640, and hardly exceeded 20,000 souls. In the Massachusetts colonies 1 man in every 250 people had been a graduate of an English university, and many of the clergy and laity brought from home a good reputation for superior scholarship and honorable service in church and college. Some of them returned and became eminent in the history of that turbulent period. In no body of immigrants up to that date, possibly in no body of people of similar origin and surroundings, were there garnered up larger possibilities for the building of a new order of human affairs in which the sovereign people should take the old place of priest and king.

The religious fanaticism, social severity, and personal intensity and eccentricity of the Puritan in New England, even then, was largely the armor of defense by which alone he could hold himself erect amid the storm and stress of a home persecution that, for an entire generation, made England almost uninhabitable by the dissenter from the established church. The only way in which these people could live at all in the enjoyment of their own religious, civic, and social faith was in a new country, out of elbow touch with all opposing influences. They did simply what any similar people, inspired by common sense and practical policy, must do. They planted themselves in a new country, with an ocean between them and the mother land, and "gave notice to quit," on the one hand, to the state church at home which would have brought to the New World the same persecution that drove them across the sea, and, on the other, to the intolerant "come-outer" or disorderly element that

would demoralize the new community. This policy of defense, this establishment of something like spiritual, civic, and social martial law in the face of the enemy, was suspended with the coming to the British throne of William and Mary, and, from that day, civil and religious liberty was the theory of New England life as surely as to-day.

Even at first the Massachusetts commonwealth of church members was the greatest advance toward republican government on the face of the earth. There, for one hundred and fifty years, with Europe at arm's length, in constant conflict with France and the pagan savage on its northern border, a vast wilderness between it and the central and southern British colonies, this people wrought out the practical experiment of a democratic order of society so thoroughly that it is now essentially the theory and practice of the American republican government and an object lesson for all the nations of the earth.

(2) More than half a century ago Sir Edward Bulwer Lytton, then a student at the university, drew up a remarkable paper on the subject of popular education, just looming above the horizon of British politics. He insisted that no system of popular schooling could be a success in the then state of English society without some previous effort to lift up the parents of the children to an appreciation of the need of education. The entire history of the public schooling of the lower classes of the English people is a commentary on this fact. There is nothing but hope for a community where the leading influences are on the side of universal education; where the child and youth live encompassed by an atmosphere of intelligence, thought, and aspiration for things beyond the present achievement. Never since the dawn of history was there a country that fulfilled these conditions better than the early communities of New England. Here were all the incentives to the most active interest in the uplifting of the young. Here was the very soil out of which might be expected such a practical new departure as the original common school of New England, from which has grown a system of popular education competent to the training of a free people in such a nationality as ours.

(3) Another powerful influence favorable to universal education was the intense and industrial spirit of this early New England people. From high to low these 20,000 immigrants were a phalanx of workers. The higher class, even "the Brahmin caste," the clergy, were chiefly landholders and farmers. Governor Winthrop "worked for a living;" the students and professors of the early Harvard studied and taught, figuratively, "in their shirt sleeves;" and for two hundred years the women of New England, not inferior in thoughtful and aspiring mental habits to any body of their sex in Christendom, had no servant class, but stood up to the terrible toil of settling a new country with a capricious climate, caring for the home, teaching the children, and laying the foundation of a highly intellectual and moral order of society. Into the new common school this people put all the energy and practical "vim" that has made New England to-day the richest section of the wealthiest nation upon earth. If the family lived away from neighbors the children were taught at home. As soon as there were enough for a group a school was established. It was often taught by the minister, the best schoolmaster that could be found, in the church or in a private house, and the first school law of the Massachusetts colony makes a long stride of progress in demanding "the employment of a master" for the schools, instead of the mistress of the ancient "dame's school" of the Continent and the mother country.

(4) Before there was any organized government of town or colony, every community in Plymouth and Massachusetts had extemporized "a government of the people." The new school was not handed down from above by civic or ecclesiastical power. It was built up, stone by stone, by the people whose children it taught, largely supported by private tuition, watched over with sleepless vigilance by the parents. The minister of the New England church was all powerful for influence; but, from the first, he was no priest. Originally he could not administer the right of marriage, and

the Bible could not be read at the opening of a public assembly. On every side he was reminded that he was but the head servant of a people who had already come to the outskirts of the civilized world and would tramp on to the uttermost wilderness to maintain the right of conscience and work out its own ideal of a state.

(5) The severity and barrenness of social life which, even to this day, provokes the satire and awakens the lofty contempt of the critic, like much of the church polity, was a violent reaction of those people from the loose living and demoralizing fashions of the "Merrie England" from which they had come. It threw back the mind, heart, and imagination of a powerful people on itself for a score of generations. The result was that in this era of "lean living and high thinking" was wrought out a religious, civil, and social polity and an educational habit that not only made the people of New England for several generations the most intelligent in the land, but the leaders in American literature and art and foremost in the great liberal movements of religion, charity, and all that makes for national reputation in the upper story of the nation's life.

(6) This very exclusiveness in the early generations of New England society was favorable to the establishment of the common school. Being all of one way of thinking on matters theological, "the religious question" in popular education did not trouble them. All believed that religion and morality were at the foundation and must be wrought into the substance of every successful scheme of universal education. They put into their school the system of religion and morals then at hand, certainly not "liberal" when judged by the present standards of the American people, but effective for the day and generation. But underneath this garment of a severe religious and moral theory was the man who wore it; a man who believed himself in the most intimate personal communion with and directed by the special providence of Almighty God; with no priest or church standing between him and his Maker. As his creed enlarged, he claimed the freemen's right for his children in the schoolhouse.

So out of this old elementary school was gradually evolved the American system of popular education, unsectarian and unecclesiastical, but practically religious and moral; the theory of character-training now established in the public-school keeping of every American State.

It was among such a people, encompassed with such an industrial, religious, civic, and social environment, that these early schools of the New England colonies, while taking on many of the forms and somewhat of the spirit of their British models, sunk a deeper educational shaft, and, in placing the schooling of the mass of children in charge of the whole responsible people as their dearest interest, laid the foundations of the American common school. A brief account of these early schools and the legislation of the colonies will show that before the first generation had passed away every essential feature of the present common-school system of the American people had been recognized and, in greater or less degree, been incorporated in the practice of all but two of the colonies.

The little settlement of Boston, on Massachusetts Bay, may certainly claim the honor of establishing one of the first of that series of free or "grammar schools" which gradually spread through the colonies. It was not a free school from the absence of tuition fees. Indeed, none of these early schools were free, except to the children of the poor, unless now and then a proper charity establishment. This school, afterwards expanded, is now known as the public Latin school of the city, probably the oldest of its kind now in operation in the Union, although other seminaries of the private or parochial church type may have the precedence by a few years.

In 1636, only six years after the first settlement of Boston, and when the entire population of Massachusetts Bay colony did not exceed 5,000 persons, the general court appropriated £400 (\$2,000), a sum greater than the colonial taxes levied for all other purposes in a single year, to establish the school which in 1638, by the gift of

£779 and a small library of 260 volumes from John Harvard in 1630, became Harvard College. It is said that this general court, presided over by Sir Henry Vane, was "the first body in which the people, by their representatives, ever gave their own money to found a place of education." Although not a State university in the special sense of our time, Harvard was a college built out of the heart of a people, by gifts of all sorts, from the timely donation of John Harvard down to the humble present of "one great and one small trencher salt." For more than one generation the new seat of learning was kept alive by the never-failing interest shown by a multitude of bequests, while the faculty served on starvation rations. During the first eighteen years all the available receipts of the college did not exceed £1,400. During the first century Massachusetts gave £8,000, and all other gifts amounted to £22,000. The population of all New England at its foundation was not above 20,000, with fifty towns and villages. Twelve of the first graduates returned to Europe and one-half of the 500 during the seventeenth century entered the ministry. During the first one hundred years the salaries of the professors were paid out of the colonial treasury. Contributions were also received from England. Until the opening years of the eighteenth century "Fair Harvard" was a sickly educational infant, fighting for life amid many adverse conditions. In the year 1700 a charter from the royal governor, Dudley, and the vigorous administration of President Leverett placed it on firmer foundations. In process of time the university was gradually detached from its connection with the church and state, and is now a private corporation; but in its first inception it was a good illustration of the way in which the people of the New England colonies went to work to establish a seat of learning—"putting their hand to the plow and looking not back," but "pressing forward" toward the educational kingdom of heaven.

Meanwhile the good example of Boston had been followed. Other towns were making arrangements for the schooling of their children together, and in every good family the little ones were taught by the parents and catechised by the parson. But now the general court set its hand to the work, in the two acts of 1642 and 1647, which are the foundation of the common school in Massachusetts and the beginning of the mass of legislation in behalf of the children and youth which is the glory of the Republic. In 1647, the date of the second law, we find the outlines of a complete system of popular education in Massachusetts—the elementary, the grammar or secondary schools, and the college—all the creation of the people, supported by the contributions of parents, private beneficence, public taxation, and legislative grants.

The new colony of Connecticut was only three years behind Massachusetts in framing an educational code similar in its essential features. In 1655 the neighboring colony of New Haven followed in a school law even more exacting, and in 1657 the united colonies of Connecticut and New Haven adopted the act of the former. With slight alterations these statutes remained the "law of the land" for the two most influential of the New England colonies till the organization of the States of Massachusetts and Connecticut at the close of the Revolutionary war. Maine and New Hampshire were a part of Massachusetts—the former till 1820, the latter till 1893. In that year New Hampshire followed in the wake of the older colony and established similar regulations for popular education.

Yale College was founded in 1698-99-1700, by the associated Congregational ministers of the colony, as "a school of the church." A sum of £700, originally raised for the enterprise, had been turned over to Harvard, where for a time the boys were sent from the younger colony. In 1701 a charter was obtained. Twenty years later the gift of Elihu Yale, a native of Boston, afterwards a governor of the East India Company, of £500 and books gave his name to this celebrated university. Beyond the gifts of other friends of education, the colonial grants, all told, up to the Revolutionary epoch, had not exceeded \$25,000, and in a century and a half less than \$100,000. Yale was rather a child of the church and Harvard a child of the people. But it is remarkable that in a period of great theological stringency Harvard Col-

lege was never bound by any illiberal or sectarian limitations that would check the freest pursuit of truth in theology. During the first twenty years Yale was free from similar ecclesiastical control, though in 1722 a theological test was introduced for the faculty which held on for one hundred years.

Brown University, in Rhode Island, and Dartmouth College, New Hampshire, were established in 1764 and 1769. Neither of them could be called an outgrowth of the common-school system, although from the first practically identified with and never found in hostility to the New England idea of universal education. Of academic and grammar schools there was a steady growth, most of them supported by the people, in this as in other respects the precursor of the present free high school now established in every State in the Union. By 1665 every town in Massachusetts had a common school, and, with due exceptions for the status of the people, there was a fair supply of the elementary, secondary, and higher education. "From the establishment of the colony of Massachusetts until the founding of the Dummer Academy, in 1780, just one hundred and fifty years, there was not a school of any importance, save the Roxbury Latin school, which was not a public school established by the town, controlled by the town, and supported wholly or in part by the town, the last charge for tuition of which there is any record in any of these public schools being in Salem in 1767."

As this original school legislation of the two foremost colonies of New England is the foundation of the vast body of "acts and resolves," national, State, municipal and rural, on which the present common-school system of our country is erected, it may not be amiss to quote them for the information of the present generation of students, teachers, school authorities, and the educational public in general. A careful perusal of these admirable statutes will dispel the reckless and ignorant assertions of more than one of the heated controversialists who rise up in periodical disparagement of the educational status of New England at the beginning of the great American campaign for universal education. It will be seen that no present theory of the educational training of Young America for American citizenship, however broad and assured of its own originality, can surpass this primal declaration of the Puritan statutes of Massachusetts and Connecticut in their regard for mental, moral, and industrial instruction and discipline as the threefold strands of the golden cord that would bind fast and forever together the destinies of a new nationality.

In April, 1635, the people of Boston, not a year after its settlement, in town meeting assembled, enacted a law establishing a school "for the teaching and nourteuring of children," and invited Master Philemon Purmont to become schoolmaster, although Mr. Maude finally accepted the position. Thirty acres of land and a garden plat were voted to the new pedagogue; £50 and a house to the master and £30 to an usher, who should also teach to read, write, and cipher, were added. Indian children went to school free. The expense was to be borne by voluntary allowance, yearly contribution, or by rate of such as refused. The order was confirmed by the general court.

From this time on it became a fashion to establish schools. Indeed, the year following the general court of the colony passed the act for the establishment of a college. It must be borne in mind that family instruction, probably by the assistance of the clergy, was already a habit. In 1642 the general court passed the following stringent education and labor law, which, with the subsequent enactment of 1647, holds within itself the entire substance of the American common-school and industrial education, after the compulsory form; and we note especially that these are not laws imposed on a community by a government and administered by a church in which the people had no decisive authority. The town meeting of Boston, the general court of Massachusetts, and the church, whose cooperation was invoked, neither of them ten years old, were little more than extempore arrangements of the people to execute their sovereign will with efficiency and dispatch.

The law of May, 1642, reads as follows:

"Forasmuch as the good education of children is of singular behoof and benefit to any commonwealth, and whereas many parents and masters are too indulgent and negligent of their duty in that kind: It is *ordered* by this court and the authority thereof that the selectmen of every town, in the several precincts and quarters where they dwell, shall have a vigilant eye over their brethren and neighbors, to see, first, that none of them should suffer so much barbarism in any of their families as not to endeavor to teach, by themselves or others, their children and apprentices so much learning as may enable them perfectly to read the English tongue, and knowledge of the capital laws, upon penalty of 20 shillings for each neglect therein. Also that all masters of families do once a week at the least catechise their children and servants in the grounds and principles of religion, and if any be unable to do so much, that then at the least they procure such children and apprentices to learn some short orthodox catechism without book, that they may be able to answer unto the questions that shall be propounded to them out of such catechism by their parents or masters or any of the selectmen when they shall call them to a trial of what they have learned in this kind. And further that all parents and masters do breed and bring up their children and apprentices in some honest, lawful calling, labor, or employment, either in husbandry or some other trade, profitable for themselves and the commonwealth, if they will not or can not train them up in learning to fit them for higher employments. And if any of the selectmen after admonition by them given to such masters of families shall find them still negligent of their duty in the particulars aforementioned, whereby children and servants become rude, stubborn, and unruly, the said selectmen with the help of two magistrates, or the next county court for that shire, shall take such children or apprentices from them, and place them with some masters for years (boys till they come to twenty-one and girls eighteen years of age complete), which will more strictly look unto and force them to submit unto government, according to the rules of this order, if by fair means and former instructions they will not be drawn unto it."

In 1647 the following school code was enacted:

"It being one chief project of that old deluder, Satan, to keep men from the knowledge of the scriptures, as in former times, keeping them in an unknown tongue, so in these latter times, by persuading from the use of tongues, so that at least the true sense and meaning of the original might be clouded and corrupted with false glosses of deceivers, and to the end that learning may not be buried in the grave of our forefathers, in church and commonwealth, the Lord assisting our endeavors:

"It is therefore ordered by this court and authority thereof, That every township within this jurisdiction, after the Lord hath increased them to the number of fifty householders, shall then forthwith appoint one within their town to teach all such children as shall resort to him, to write and read, whose wages shall be paid either by the parents or masters of such children or by the inhabitants in general, by way of supply, as the major part of those who order the prudentials of the town shall appoint, provided that those who send their children be not oppressed by paying much more than they can have them taught for in other towns.

"And it is further ordered, That where any town shall increase to the number of one hundred families or householders, they shall set up a grammar school, the masters thereof being able to instruct youths so far as they may be fitted for the university.

"This is the law as it appears in the Massachusetts Revisal of 1660. This revisal was made in 1658 and the origin of the law in 1642 is indicated by writing that date after it in brackets. The same law, but with varying capitalization, punctuation, and paragraphs, appears in the collection of 1672. The original law, the form in which it was passed by the general court in 1642, will be found in Mass. Col. Records, II, 6-9.

And if any other town neglect the performance hereof above one year, then every such town shall pay £5 per annum to the next such school till they shall perform this order."

A subsequent law orders "that in every town the chosen men appointed to manage the prudential affairs of the same shall henceforth stand charged with" the execution of these stringent laws. With occasional modifications, but in the same spirit, the common-school system, including the elementary, secondary, higher, moral and religious, and industrial training, became a part of the common life of the colony under these original laws. It is significant that in these original statutes neither the word church nor minister occurs. Unlike the method of the great central colonies, the education of the young was taken in hand by the people themselves, through officials elected in a manner more nearly resembling republican government than ever before.

In Connecticut, in 1650, the original statute of Massachusetts was reenacted, with slight changes.

In 1655 the colony of New Haven passed a similar law. Ten years afterwards, on the union of the two colonies, the Connecticut code of 1650 became the law of the united colonies. In 1672 each of the four county towns of the colony was required to maintain a grammar school, "every family which is able and willing is commanded to give yearly but the fourth part of a bushel of corn, or something equivalent thereto, for the advancement of learning by the college at Cambridge." According to Dr. Henry Barnard, "as early as 1701 the system of public instruction in Connecticut was so far matured as to embrace the following particulars:

"(1) An obligation on every parent and guardian of children 'Not to suffer so much for barbarism in any of their families as to have a single child or apprentice unable to read the Holy Word of God, and the good laws of the colony,' and also 'to bring them up to some lawful calling or employment,' under a penalty for each offense.

"(2) A tax of 40 shillings on every £1,000 of the lists of estates was collected in every town, with an annual State tax, payable proportionably to those towns only which should establish their schools according to law.

"(3) A common school in every town having over seventy families, kept for at least six months in a year.

"(4) A grammar school in each of the four head county towns, to fit youth for college.

"(5) A collegiate school toward which the general court made an annual appropriation of £120.

"(6) Provision for the religious instruction of the Indians."

Well does the learned compiler of the great treasure house of educational information, *The American Journal of Education*, remark: "The system, therefore, embraced every family and town, all classes of children and youth, and all the then recognized grades of schools. There were no select or sectarian schools to classify society at the roots, but all children were regarded with equal favor, and all brought under the assimilating influence of early associations and similar school privileges."

Here was the foundation laid, not only for universal education, but for a practical and social equality which has never been surpassed in the history of any other community. It is not remarkable that, under this thorough system, the people of Connecticut, at the dawn of American independence, were the most enlightened of all the colonies and that, in 1795, a great landed domain in the Territory of Ohio, now known as the Connecticut Reserve, because reserved by the State when it ceded its claim to a portion of the general national domain in the West, should have been set apart as the first permanent American State fund for education, the income to be applied to the support of common schools.

The only exceptions to this unanimity of the New England colonies were, first, the partial case of the Plymouth colony, that waited fifteen years before organizing

a school. Here is a flat disproof of the assertion that the Pilgrims brought from Leyden, Holland, the idea of the American common school. In fact, one of the chief reasons for leaving their Dutch home of a dozen years was the desire to educate their children in English schools, their dislike of what they termed "the outlandish language" of the Hollanders, and the dread of social and personal juvenile demoralization from the free and easy continental habits of life. The reasons for this apparent neglect of education in their new home were the early privations and perils of this little band of pioneers, cast in midwinter on the bleak Atlantic coast, and the extremely radical and intensely personal type of character of the people themselves. The Plymouth colony was a collection of the most extreme religious thinkers of northeastern England, while the Puritan immigration to Massachusetts Bay included a more conservative class, who could have remained longer behind and had not yet entirely broken with the civil and ecclesiastical authorities at home. They represented the upper strata of the great progressive middle class that now controls the Government of Great Britain, and the fact that they at once established a system of education which was mainly the grammar school and college of England and Scotland, enlarged on its elementary side to meet the exigencies of a new country and a progressive civic polity, is sufficient proof of the essentially home origin of their new experiment in education.

The colony of Rhode Island was another even more extreme community of radical Dissenters and Protestants, not only for a larger ecclesiastical freedom than they found in Massachusetts, but for a "glorious liberty" of personal and political activity.

Thus, while Roger Williams and his associates did bravely stand by the idea of personal independence of thought and action, the colony they founded had at first little thought for that education of the whole people on which the entire American structure of civil and religious liberty is founded, until 1790, at the close of the Revolutionary epoch. Even then Rhode Island had but 10,000 people, and was one of the last, as the least colony, that gave in its adhesion to the new National Government. Still education was not wholly neglected meanwhile. Brown University was established in 1764, and schools existed in Providence and Newport, while the latter town was becoming one of the chief marts of commerce for the new Republic.

The colony of Vermont did not exist prior to 1724, and, till the Revolution, was practically a scattered group of pioneer settlers in a mountain and woodland wilderness, always in peril from the French and Indian aggressions from Canada, and distracted by a chronic controversy for civil independence with its neighbors in New York.

The significance of the original educational theory and practice of the early New England Colonies is fitly described by Horace Mann, in his vigorous, characteristic style:

"There are three fundamental propositions upon which the common school system of Massachusetts rests:

"(1) The successive generations of men, taken collectively, constitute one great commonwealth.

"(2) The property of this commonwealth is pledged for the education of all its youth up to such point as will save them from poverty and vice, and prepare them for the adequate performance of their social and civil duties.

"(3) The successive holders of this property are trustees, bound to the faithful execution of their trust by the most sacred obligations; and embezzlement and pillage from children have not less of criminality, and more of meanness, than the same offenses perpetrated against contemporaries."

As representative of the moral and religious ideal of the early New England school we may fitly reproduce the prayer of Rev. John Eliot, who, for fifty years, labored for the conversion and civilization of the Indians in New England, including in his ministry the preparation of schoolbooks in their language, the establish-

ment of schools, and the persistent effort to bring their superior young men into the enjoyment of the best opportunities in the colony. He was the untiring friend of the early common school of the colonies. The following prayer reads like the united petition of the nobler sort of people in the New England colonies in behalf of the institution next to home and church nearest their heart—the early colonial common school:

Cotton Mather writes of John Eliot:

"A grammar school he would always have upon the place, whatever it cost him; and he importuned all other places to have the like. I can not forget the ardor with which I once heard him pray, in a synod of these churches which met at Boston to consider 'how the miscarriages which were among us might be prevented.' I say with what fervor he uttered an exhortation to this people: 'Lord, for schools everywhere among us! O! that our schools may flourish! That every member of this assembly may go home and provide a good school to be arranged in the town where he lives; that before we die we may see a good school arranged in every plantation in the country.' God so blessed his endeavors that Roxbury has afforded more scholars, first for the college and then the publick, than any town of its bigness, or, if I mistake not, of twice its bigness, in all New England."

A fair analysis of this body of colonial legislation in behalf of universal education shows how completely the entire structure of the American common school is builded on foundations that must endure, unless the American people "fall from grace" and return to some of the old-time European systems or launch out on the unknown sea of the ultra secular theory, which divides man into "faculties" as separate and well defined as the water-tight compartments of a great ocean steamer, holding that the state, the only power on earth which claims the supreme right to override the inalienable and natural rights of "life, liberty, and the pursuit of happiness" must be absolutely divorced from all acknowledgment of Almighty God and all recognition of the moral law, outside the dim and distant logical approaches of the experimenting of a materialistic philosophy.

(1) The entire system originated from and was organized, supported, and administered by the people, as the people was then understood. This meant the reliable and responsible portion of the population, on whom church, State, and society were dependent. That neither universal suffrage, nor woman suffrage, nor several other "rights and privileges" were at that time factors of civilized society is not to the point. The voting and governing people of New England was the broadest base on which a civilized government, up to that date, had been reared, and, since its fundamental principle was an absolute denial of the infallible authority of priest and king in the realm of the personal conviction of the voter, here was the broad gateway through which the majestic procession of humanity has defiled in its march of centuries toward the uplands of the universal emancipation of the race. That gate was never shut, and with the springing forth of "the new light," prophesied by Robinson, this people followed on, and to-day can boast of the most complete organization of "liberty and union, one and inseparable, now and forever," in the wide world.

These colonies, for a generation after the settlement of Massachusetts and Connecticut, were to England virtually a far-off land, and the new colonial child had been weaned and stood well up, with a stiff back and an obstinate pair of legs, before the iron hand of parliamentary aggression was felt. There is no evidence that the home government was ever sufficiently interested in the new colonial experiment in education to interfere in any way with its development. Neither is there any ground for the assertion that the New England system of common schools is an imitation of any of the old European forms of parochial education dominated by the church and administered by the clergy. That the church and the clergy were very positive factors in the school life of Massachusetts and Connecticut through all those years is not disputed. But the critics who see in this fact only the evidence

of the ecclesiastical despotism and bigotry of New England forget that, in affairs of church, as of state, the people were practically supreme. The Puritans of New England came to a new country as a body of dissenters, either already cast out or in danger of expulsion from the Church of England at home. For a generation these churches were a group of absolutely independent congregations, steered by the people composing them, jealous to the last degree of interference from any quarter, holding their clergy to the most absolute fidelity as representatives of the congregation. It was only a growing conviction of the danger of this isolated independency that drove, first the churches of Massachusetts and afterwards of Connecticut, to the loose confederations of the Cambridge and Saybrook platforms, which were the beginnings of Congregationalism, the only original contribution of America to the ecclesiastical polity of Christendom. The essential principle of this new polity was the persistent denial of ecclesiastical authority and the substitution of "advice" and "influence" for authority, as the only legitimate functions of church union. The union of church and state which, after a sort, held on, in the form of a public tax for the support of public worship was not the imposition of a church by a sovereign power on the people but, originally, the unanimous consent of a community to be taxed for the common good in religious as now in civil and educational affairs. The town was taxed for the church and school; both church and school being the creation of the popular will. The clergy were not a priesthood, but simply a body of ministers, the hardest worked class of public servants; for several generations the guardians of the new life, constituting the vast majority of the educated class, settled "during good behavior," mostly landed proprietors, influential men of affairs, politicians, teachers, the "men of all work" of the new colonial dispensation. Still below church and state was, forever abiding, "the common people," the original source of power—no hard and fast aristocracy, such as ruled with despotic sway even the free cities of Europe; no body of titled men, entrenched in heredity and permanent political position—abiding on a sacred foundation as flexible and variable as the blue all-surrounding sea that beat against their rocky or sandy shores, never for a day outside its everlasting barriers, but ebbing and flowing with the passing hours, now lashed to a tempest, now reposing as a sea of glass, now bearing aloft a proud navy on its mountain waves, now stranding the proudest monarch of the waters on a sand bar of its broadest bay.

(2) This fact disproves the claim of the Christian churches to the introduction of sectarian religious education in common schools preferred by the ecclesiasticisms that brought their polity across the Atlantic. The religious and moral teaching in that early colonial school was doubtless the severe theology and the corresponding social and private morality of the day. It was enforced in the schools, as in the home, as the common faith and practice of the people. It assumed in full the fundamental proposition that the American common school is, below all else, a school of character; that good citizenship can only be the outgrowth of a good moral and religious life, and that the system of morals announced in the life and teaching of the Master is the ideal of the new national life, to be interpreted by the best reason, conscience, and growing experience of the people. But with the passing years this fundamental idea of Puritanism, the right and duty of every man to the guardianship of his own soul above and beyond his allegiance to king, emperor, or priest, wrought out its legitimate result in the limitation of this function to moral and practical religious instruction and discipline in the schools common to all. The present American system of moral instruction and discipline in the people's schools of every degree is the logical outcome of that original practice in the New England schools; and the extreme theory of the absolute divorce of the common school from all moral instruction referring to a religious sanction, is a recent European idea, a feature of the impracticable continental notion of democracy. Here again we have the Anglo-Saxon, practical, common-sense idea of moral and religious training, whereon has been founded and well founded our republican order of civilization, all continental European theories, ecclesiastical or philosophical, to the contrary notwithstanding.

(3) Here at the outset is laid the broadest foundation for the education of the whole people by private and public cooperation in the establishment of the elementary, secondary, and higher departments. The country district school with its meager fare of "the three R's"; the grammar school with its narrow curriculum of classics and mathematics; the college, at first little more than a nursery for ministers, because the ministers were virtually the "men of all work" who were expected to attend to everything that everybody else had no time for, were equally a part of the new scheme of universal education. The theory now forced upon public attention, that the State should concern itself only with the elementary schools of children, runs sharply against the fact that it was the college that first received the public bounty of the colonial general court, and for a hundred years was supported and to a degree governed by the provincial legislature. And until a recent date the legislature of Massachusetts has been accustomed to give a "send-off" to every one of the dozen colleges of the Commonwealth, in the form of a generous contribution of money or lands, and, until the final organization of the free high-school system, by corresponding subsidies a large number of academies were endowed. The New England colonies never fell into the net spread by a persistent class of the social, civic, and clerical opponents of the common school, that the vast public interest in the secondary and higher education is their own special province, or that the preparation of teachers and superintendents of the common school should be remanded to the sole charge of irresponsible private, sectarian, or corporate associations. From the beginning the colonial government flung wide open all doors of culture.

(4) That, for a time, none of these schools were free, in the modern sense of our gratuitous instruction, is no disproof of this intent, since it was impossible for a government so limited and under such constant pressure of taxation for a bare existence to shoulder the entire support of the education of the masses. The State did its uttermost and then left it to the local authorities to do the rest. The result is, to-day, that Massachusetts, the State which, on the whole, offers the broadest and most effective system of instruction in the world to every child, with free schoolbooks, with \$10,000,000 expended yearly for her 350,000 children, with a free high school offered to all of her youth, with 90 per cent of school children under skilled supervision, has scarcely a State tax at all for education—only a moderate school fund with an income of \$100,000 a year, depending on local town and city appropriations for 99 per cent of this vast amount. Every State in the Union is now following on this track. Only here, in the waking up to the necessity of a generous local support of public education, is seen a hopeful future for the common schools of every portion of the country.

(5) The curriculum of the early New England elementary school was certainly meager to the last degree, including little beside reading, spelling, writing, and the small "figuring," essential to the ordinary business of life. But such was the order of things even as late as a century ago. The children's day had not yet dawned and the old Pagan and Hebrew ideas of the absolute supremacy of the parent over the child still brooded like a dark cloud over the path of the colonial life. But the article for the assumption of the people's charge in education that appears in the Massachusetts law of 1642 was a public assertion of the right of the State to educate the child in default of the parent to do his own duty. While the home could meet the exigency for the time it was well. But the Massachusetts general court sent forth its mandate to look into the homes of the people and unmask parental greed, neglect, and abuse; it even asserted supreme authority to take the child from the parent and educate and train it at public expense. This idea is now wrought out in our elaborate system of legislation for the protection of childhood and youth. The principle there asserted that the little child might be schooled in knowledge, morals, manners, and industrious habits by the whole people for the public good was certain to open into the broad and healthful uplands of the present American common school.

It was almost two centuries yet before Boston reached the point of adding a primary department to its growing system of public instruction. Paganism and Mohammedanism were especially religions for the adult side of society, leaving the children and youth to the despotic rule of man, tempered only by the all-protecting love and wisdom of woman shut up in the narrow life at home. When the Great Teacher spoke the comprehensive words, "Suffer little children to come unto me and forbid them not, for of such is the kingdom of Heaven," he delivered the charter of children's rights and broke the chains in which the ancient world, Pagan, Hebrew, and Mohammedan, had bound the household. The order to give a "master" to the elementary school was a step out from the traditionary dame school of Europe and marked a decided new departure. For a century the schools of the New England colonies were taught by graduates of Harvard and Yale. In some respects this was an advantage over the rural common schools of to-day. In the early experience of the author of these pages the country district schools in New England in winter were taught largely by students and graduates of the different colleges and academies.

And, beyond the meager common curriculum, there was, even then, a broad margin of semiprivate instruction of ambitious pupils by the teachers outside of school hours, with the constant cooperation of the entire household at home. The exclusion of girls from the elementary schools was in the same line. Up to a generation ago, in half the States of the Union, the ideal of female education was by the governess or tutor in the household, and only the want of means to do the fashionable thing was the excuse for sending the daughters to a private class or abroad to the female seminary. But the progress in both these directions in these States notes the growth of a broader sentiment in the most enlightened centers of education in all lands. It was out of the old New England district common schools of the country, to which girls were admitted, that came forth the Emma Willards and Mary Lyons who built up the first great seminaries to extend to the daughters of the people the superior advantages enjoyed by their brothers. To-day every Protestant university in the Union is in greater or less degree responding to the demand of the young womanhood of the nation for equal rights and opportunities in the open field of universal education.

The course of study in the early grammar school and college of New England was substantially the same as in the public schools of the England of that day. The present race of elderly British statesmen, including Mr. Gladstone, were educated in the great "public schools" on a mental diet almost as meager and exclusive as that of the early New England college. Indeed, so well up to the prevailing ideal was Harvard College that from the first it included a considerable number of students from across the ocean and many of the graduates returned to the Old World and became well known in every private and public station. To-day Harvard University, the first college established by the whole people, leads the country in its experimenting on the field of the elective system of study and the broadest scheme of moral training, through its successful arrangements for public worship and a personal Christian ministry, to the student.

(6) One would think there was small need for insisting on industrial education in the early colonial school in a new land, where every man and woman, from the governor and the parson down to the Indian and negro slave, was practically a day laborer in the common work of the hard world in which their lot was cast. Yet, in all this early legislation, there was inserted, and, in the law of Connecticut, placed at the front as a chief impelling cause, the demand that the people should train up their children and youth in the habit of industry and the actual practice of a self-supporting occupation.

Here was one of the mighty moving forces of the civilization of that early time, the tremendous industry and relentless economy of the early New England life. The records of the Plymouth colony are full of the most ludicrous regulations for the

punishment of laziness and the saving of everything that in any way could contribute to the necessity or comfort of life. Never did a race of people of such ability and aspiration, men, women, and children, toil so terribly and with such putting of the thinking brain into the working hand as these New England folk for the one hundred and fifty years before the Revolution. Then and there were laid the broad foundations of the enormous wealth and marvelous inventive and executive faculty of the succeeding generations of young men and women educated in the industrial system of those States. Neither was the economy of that primitive day what certain magnates of the exchange dismiss with the contemptuous epithet "stinginess." The colored people of the South, to-day, handle more money and have in reach more of the comforts of life than the fathers and mothers of New England for a full generation after the settlement of Plymouth, Boston, Hartford, and New Haven. But, already, these people had grasped the secret of a Christian economy as distinguished from a pagan stinginess; they had learned to save on the lower in order to expend on the upper side of life. It was while these people were living within such narrow limitations that their little children died like sheep, and toil and privation, like gaunt specters, looked in at every household, that the church, the school, the college, everything that made for the upper side of civilization, were so nobly supported. Could the story be told in full of the way in which the generations of the New England people have earned and saved the money by which the present mighty structure of religion, education, and charity, "with all that adorns and embellishes civilized life," has been raised; how they have earned the gigantic capital that still dominates half the continent and trained the faculty that fills the Patent Office with miracles of labor-saving invention, the lesson might well be learned by other communities. A work like that of Mr. William E. Weedon sets forth in startling colors the amazing progress of these colonies in all the arts and industries in the face of the obstinate, even malignant, industrial policy of the mother country. It was this policy of suppression of the industrial forces of an irrepressible people that finally drove New England into revolt. And in the life of rural New England the common school has always gone along with a practical education in work. The rapid rise of village and city life that removes the children and youth so largely from the necessity and opportunity of hand labor is one of the chief reasons for the present great movement in behalf of manual training and gymnastic exercises.

(7) But we must never forget that behind and before, over and above, and all around the primitive system of New England education by the common school, was the larger seminary of the rising New England life. It was the providential opportunity of this Puritan civilization, for the one hundred and fifty years before the Revolution, that the country was occupied, governed, and developed by a race of men who believed themselves a "peculiar people," watched over and directed by daily and hourly communion with the "light that enlighteneth every man that cometh into the world." It matters not that the morality of these people did not, in private life or character, rise to this exalted ideal of a providential call to establish a new kingdom of God in a new world; or that their religious life was pitched on the key of a narrow creed, and a severe type of character that too often strayed from the broad highway of Christian charity. The conviction was present. It was the public ideal, and to a greater or less degree it modified everything in public and private life. It made the society of the day a moral and spiritual phalanx, moving with irresistible power on the lines of what was foreordained, the beginning of a new kingdom of Heaven on earth. By this atmosphere was the humblest New England rural school of two hundred years ago somewhat environed, as by the bracing air and brilliant sunshine of a northern clime. The entire exterior of New England is a stormy seacoast. The greater area of its interior is a wild realm of mountain land. For two centuries it was largely a region of dense forests, rushing streams, and steep hillsides, with a winter climate only to be lived in by a perpetual def-

ance of nature. It was amid this pioneer life, destitute of all the helps to easy living of the modern world, off on the border land of civilization—on one side, threatened or worried perpetually by the most powerful empire on the earth; on the other, in constant peril from the savage and the Frenchman; preoccupied with the task of keeping the wolf from the door and building up a new order of human affairs—that the child and youth were sent to school. About all that any school could give was the most simple lessons of reading, writing, and “figuring,” as a help in working out the profound problems of civilization with which he was so soon to be confronted.

In surroundings like these, children and youth grow preternaturally old; human nature “lives fast” and good people find each other and learn the divine art of cooperation for great ends. Here, in this unity and intensity of public opinion, concentrated on one overpowering public interest, the growth of a new society, must we look for the prodigious outcome of what to our modern educational expert seems an almost contemptible agency for the schooling of a people. Horace Mann was born under similar conditions and fitted for Brown University in a few months. Henry Wilson was taken from a New Hampshire “poorhouse” and “bound out” to a stingy farmer who refused to send him to school, “read through” a minister’s library by the light of pine knots thrown on the kitchen fire, and died Vice-President of the United States. Thousands of these brave boys and girls were sprouted in these country schools and worked their way up to an education through privations, toils, and sacrifices only next to perpetual martyrdom. Here we recognize “the power behind the throne,” in the environment of these beginnings of the American common school. And the most hopeful feature of the revival of the new education in the new South is that these great States are now swarming with brave boys and girls who are going through the same process of working out an education in a meager country school, through labors and experiences well known to multitudes of the best New England men and women, recalling their own experience in the good fight for manhood and womanhood out of which is woven the warp and woof of our splendid American life.

One of these typical seminaries of the earliest period was the celebrated public school of Dorchester, Mass. It was founded in 1639, less than ten years after the settlement of Boston, for the instruction of boys “in English, Latin, and other languages.” At first it was supported from the income of the public lands of Thompsons Island, granted to the inhabitants by the general court, and the occupants of the land were subjected to an annual assessment of £20 for this purpose. The seven “selectmen” divided at once on the burning question whether “maydes” should be schooled with the boys. The result was that the “little maydes” of Dorchester were requested to step out, for fifty years, when their granddaughters stepped in. In 1641 the interest in the island was conveyed to the town for the maintenance of “a free school for instructing children and youth in literature and good learning;” but in 1659 the general court made other donations and conveyed to the town 1,000 acres of land, in lieu of the loss of title to the island. John Clapp gave \$13,500 in 1655 “for ministry and school,” and, from that time on, a succession of gifts flowed in. In the early period a tuition fee was paid in produce, and the cost of fuel, a big matter in a colonial New England winter, was assessed on the parents, each scholar representing a load of wood, cut, if “long.” Later on a fee of two and sixpence a family was imposed in place of the wood. In 1781 an annex was voted for a different part of the town.

The records show that as early as 1645 this was, in all essential respects, a public school in the present acceptation of the term. The “school wardens” were chosen for life by the inhabitants, with large powers, but subject to the veto of their constituency. The master was chosen with the consent of a majority of the people. The schoolhouse was kept in repair by an income from rents; but arrears and emergencies were met by the people. The inhabitants decided the hours of session, 7 to 5, or 8 to 4, with two hours intermission at noon. On Monday morning the children

were examined, in public, on their recollection of the Sunday service and their behavior thereat, and fit approval or discipline administered. There was no distinction between rich and poor. Especial attention was given to instruction in manners and morals, and a service of prayer was held at the close of the day. Corporal punishment was carefully guarded, and aggrieved parents could appeal to the wardens against the master. One of the first books in the school was the New England primer. The hornbook was an arrangement for the use of beginners. It consisted of a leaf of coarse paper with the alphabet and the Lord's Prayer printed upon it, fastened on a thin slip of wood and covered with horn to protect it from soiling. The children must read the primer before admittance, being taught at home, or in a private dame's school. Spelling the words of a lesson, writing, and "cyphering," with reading, were the regulation course of study, at first. Of 70 teachers of this school before 1790, three-fourths were graduates of Harvard College, Cambridge (England), Brown University, and Dartmouth College; 31 of them were ordained ministers.

Out of the training in this people's seminary came an interesting episode in Southern life. In the year 1700, a colony of Dorchester Congregationalists, under the lead of Rev. John Lord, emigrated to a place, now Summerville, near Charleston, S. C., and there settled a new Dorchester, where they and their descendants remained for fifty years. One of their first doings was to reproduce a feature of their New England home under a colonial charter, known as the Dorchester Free School. Driven from the place by its unwholesome climate, they marched on to the new colony of Georgia, where they were assigned, by Oglethorpe, to a tract of country south of Savannah, along the seacoast, named St. John's Parish. They built a Congregational church at Midway and a famous academy. When the first Continental Congress assembled at Philadelphia, as the colony of Georgia was not prepared to send delegates, St. John's Parish commissioned Mr. Lyman Hall to go in their behalf; so that the first Continental Congress consisted of the representatives of twelve colonies and Lyman Hall, representing the Dorchester folk in Georgia. The patriotism of the plucky little parish was appreciated, and Mr. (afterwards Governor) Hall was finally joined by additional delegates from the colony. At the close of the war, the new State of Georgia, in addition to gifts of estates to Gen. Anthony Wayne and Gen. Nathaniel Green, organized a county from this parish and named it Liberty County, in honor of the patriotism of the people. For well-nigh one hundred years Liberty County, Ga., was "known of all men" in Southern parts for the number of distinguished clergymen and educators it sent forth. Among them were the Gildersleeves, Joneses, Bakers, Mells, and numerous others, many of whom are still among the best known of the educational men of the Gulf States. The country finally became a region of great plantations, and in the march of General Sherman was relieved of its large slave population. A recent visit showed the old church, now a colored conventicle; and the picturesque dilapidated cemetery, crowded with the headstones of well-known people. The negroes, in imitation of their predecessors, are among the best of their race in the State. We sat at an open window on a Sabbath morning in early spring and saw a hundred wagons pass, filled with these people, who were as well dressed as the old Dorchester fathers and mothers that left Boston one hundred and seventy-five years before, and with all the evidences of moderate prosperity. Liberty is one of the "dry" counties, under a local option prohibitory liquor law.

It is unnecessary to enlarge on this head, as every considerable town in these colonies, in due time, had its school, and even the isolated settlements, "away out West," as Springfield, Mass., was first called. Those up among the mountains of New Hampshire, on the coast of Maine, and on the islands of the sea, also had this opportunity of a common school. That there was illiteracy still existing among a people so circumstanced in a border country is not surprising. But, long before the Revolution, the colony of Connecticut boasted that all its people could read and write.

And the life they lived was a "select school" of mental, moral, and industrial training, such as many a great metropolis is now trying in vain to devise for the benefit of the most hopeless of the "neglected classes"—the children of rich, thoughtless, or ignorant parents, still kept by the dictates of baleful fashions from the contact with actual life, the most tonic discipline of all for the growing girl or boy.

It was not alone to South Carolina and Georgia that the new colonies of Massachusetts and Connecticut sent the graduates of these early common schools and colleges. Nine years before the Pilgrims landed on Plymouth Rock a band of several hundred Puritans from England appeared on the south shore of the James River, in what is now Norfolk County, Va., and at once went at their characteristic business of building up a country in all essential respects like that of the later comers in New England. For a term of years they went on with success; became known as a prosperous settlement; sent two burgesses to the colonial assembly and, afterwards, furnished a governor to the colony during the administration of the Protector, Cromwell, in England. But darker days fell upon them. Governor Berkeley worried them out of their homes under a system of nagging persecution, every way as illiberal as the early bigotry of New England.

In 1649 they accepted an invitation to go to Maryland, then, under the rule of Lord Baltimore, a refuge for the persecuted, and settled at Greenberry's Point, on the Severn River, near the present city of Annapolis. For fifty years and more the Puritan settlement in Anne Arundel County was the political and social backbone of the colony, and, more than once, became the governing power, finally upsetting the feudal tenure of Lord Baltimore, and delivering the people of Maryland over to a popular government. They were finally mingled with a large settlement of Quakers and absorbed in the growing population of this portion of the State.

In 1753, 600 citizens of Windham County, Conn., under direction of the Susquehanna Land Company, established themselves in a region in the Valley of Wyoming, Pennsylvania, which to-day includes 5 counties and 15 townships, inhabited by more than 200,000 people. In spite of perils from the Indians and the terrible Wyoming massacre commemorated in Campbell's exquisite poem, they appropriated 900 acres of each township to the support of schools, organized education in nearer approach to the present common school system than ever was known at home, and held on under this local arrangement until 1834, when the State of Pennsylvania first established a full system of common schools. Among its citizens the most important character in placing in the new constitution of the State, in 1790, the clause under which Pennsylvania now supports her excellent system of public instruction was Timothy Pickering.

About this time a notable religious movement occurred in the migration to Virginia of a body of people who, under the ominous title "New Lights," inaugurated a prodigious revival. Beginning in the region of what is now known as "The Wilderness," they woke up a widespread interest, converted several leading men, interested Patrick Henry, and forged ahead till they had made a streak of light all the way down to the neighborhood of the present Atlanta, Ga. This movement of the Virginia Baptists was a powerful factor in the agitation, led by Thomas Jefferson, for the separation of church and state in Virginia, and had a powerful influence in the subsequent separation of the civil and ecclesiastical powers in the Constitution of the United States.

Dr. Benjamin Franklin, who for a time was a student in the Latin school of Boston, became the most prominent leader of educational reform in the colony of Pennsylvania, under the rule of the Penn family which, spite of the broad views of its distinguished head, never favored the common school. Franklin was one of the chief organizers of the University of Pennsylvania, and more than one of the present institutions of learning in Philadelphia refers to him as its founder. He interested himself warmly in the establishment of schools for the new German immigrants, and, although resisted by the German clergy, accomplished great good. Almost every

great city in the Union has a "Franklin schoolhouse" among its educational buildings.

One of the most entertaining, certainly one of the most useful, books that could be compiled for the instruction and inspiration of American educators would be a biographical record of the superior teachers during the one hundred and fifty years of the New England colonial life. Two centuries ago, everywhere in Christendom, the clergy largely monopolized both the teaching and supervision in school life. But only in the New England colonies could it be said that the clerical body was in line with the type of education that later developed into the American common school. The reason of this was that, in the first new American departure in ecclesiastical affairs, there was laid, at an early period in these New England colonies, the foundations of the Congregational polity, in which the body—"church members" and the congregation—constitute an independent religious body which approves its creed, appoints its teachers, directs its polity in regard to other churches, and, in all essential respects, constitutes the church.

In New England the church and the common school had the same constituency. Neither was the creature of an ecclesiastical or civil body claiming any right above the will of the people who were its working membership. The minister, the local civil authority, and the schoolmaster were chosen by the same body of voters and, in all matters concerning education, acted in complete unison. Thus it was natural and often best that to the minister, who at that period was usually the most competent man in the community, should be assigned the added work of the teacher, especially of the grammar or higher department of the public school. The children were prepared for this school in a lower department, often taught by a woman—perhaps oftener a private than a public arrangement. It was owing to this fact that, for two hundred years, the common schools of New England were in favor with the leading clergy and received the great accession of power that comes from the approval of the organized religious life of the community. Hundreds of the ablest and most devoted clergymen of these colonies, at one time many through their entire professional career, were thus engaged in the work of instruction in the people's schools.

But outside the clerical class there grew up, from the first, a class of professional schoolmasters, somewhat of the British type, but modified by the demands and spirit of the new colonial life, who served the people in a way that merits far greater recognition than even the public of to-day is inclined to give. In the great treasure-house of American educational lore, Dr. Barnard's 30 volumes of the *American Journal of Education*, will be found a large number of these biographical sketches, all prepared with care and many of them inclosed in a broad margin of information on contemporary educational affairs. In the "good time coming" one of the most useful circulars of information of the National Bureau of Education may be a volume of these admirable sketches, collected from Dr. Barnard's overflowing treasury. The limits of this essay forbid even the mention of this illustrious roll of men and women who, by their lifelong devotion, wrought out, year by year, what has become the most precious heritage of the people—the American system of common-school education. A brief sketch of the life and work of one of the earliest, as one of the most eminent, of these men, may, however, be given as a type of the superior New England schoolmaster of the old time.

Ezekiel Cheever, the son of a linen draper of London, was born in that city in 1614; well educated at St. Paul's school; came to this country in 1637, at the age of 23, and became one of the founders of the colony of New Haven. He was at once recognized; was one of the 12 men chosen to establish the church and, in that capacity, became a deacon of the congregation and an occasional preacher. He was elected a deputy from New Haven to the general court in 1646. As the large majority of the settlers of New Haven could read and three-fourths of them write, it is not remarkable that they called their best scholar to teach in the new school.

From 1638 to 1650 Mr. Cheever taught the first schools in the new colony. Beginning with the elementary department, he was soon promoted to the mastership of the first free school. This school was largely a private arrangement for the instruction of select pupils of all classes in the classics and higher branches. It was the beginning of the academy, that, later, became so large an element in the education of New England; indeed, largely monopolized the secondary education in these States. At first, however, there was in the free school an element of public support, and this at New Haven was established under the following enactment of the "town meeting."

"For the better training of youth in this town, that, through God's blessing, they may be fitted for public service hereafter, in church or commonwealth, it is ordered that a free school be set up, and the magistrates with the teaching elders are entreated to consider what rules and orders are meet to be observed, and what allowance may be convenient for the schoolmaster's care and pains, which shall be paid out of the town's stock."

For one hundred and fifty years the colony of Connecticut educated its children by this cooperation of private and public effort, with the result that, in 1800, it is asserted that "a family which had suffered so much barbarism as not to teach, by themselves or others, their children and apprentices so much learning as may enable them to read the English tongue, or even an individual unable to read the Holy Word of God and the good laws of the colony, was not to be met with."

But, in some way, Mr. Cheever ran against the sharp points of the New Haven ecclesiastical and social etiquette and was tried by the church for "an offensive carriage in church and public assembly" and "a stiff and proud spirit." The result was that he removed to the more liberal colony of Massachusetts, where, in 1650, he is found at Ipswich. For eleven years he wrought there as teacher with such vigor that he not only left the school "famous in all the country," but the little settlement "ranked in literature and population above all other towns in the county of Essex," a fair illustration of the vital relations in which the school stood to civilization in the community in which it was established. During these eleven years he sent 9 students to Harvard College. The school was not a foreign institution imposed by the state or the church, but the most vital part of the body politic, next to the home itself, through which circulated the lifeblood of the community. The Ipswich school was under the direction of the town authorities as far as choice of master, the imposition of tuition fees on each family, and the collection and distribution of funds was concerned. Here the good schoolmaster lived on an estate belonging to the town, built a barn, and cultivated an orchard.

In 1661 Mr. Cheever removed to Charlestown, Mass., whose educational affairs were evidently in a tangle, stirred up the people to repair the schoolhouse, pay his salary punctually, and give him the monopoly of the school-keeping business in the place. In nine years he had evidently left education in this settlement, as in New Haven and Ipswich, in a condition to go alone, and stepped out and up to his final position (the highest in the eastern, perhaps in all the colonies at that time), the mastership of the free school that, after 1790, under the name of the Boston Latin School, has become famous as one of the most celebrated institutions for the secondary education of boys in the United States. The agreement was made, as now, by the governing body (then the selectmen of the town), and his salary was fixed at £60 a year and the use of the schoolhouse. At this time the school had been in existence thirty-four years, established under Master Maude in 1636, and carried on in substantially the same way with varied success. But when Master Cheever, after an apprenticeship of thirty years, stepped on deck, the good ship righted, and for thirty-eight years, till 1708, was the foremost educational authority in the growing town. The schoolhouse occupied the site of the present King's Chapel, corner of Tremont and School streets, and the school is described as "not only the principal classical school of Massachusetts, but of the British colonies, if not of all America." Pupils were

admitted when able to read, at 6 or 7 years of age, and at once put into the "Latin Accidence." It seems to have been a habit of the old gentleman to administer vigorous corporal punishment by thrashing a mischievous boy for hindering his fellows from studying. Yet it is recorded that his "presence was an agreeable mixture of majesty and sweetness, both in his voice and countenance," and his pupils carried away from the school an abiding reverence and affection for their master. He was probably the first maker of schoolbooks in the country, having produced "a short introduction to the Latin tongue," which passed through 20 editions before 1790, was for more than a century the text-book in most of the Latin schools in New England, is called by eminent scholars "the wonder of the age," and held on till 1838. He also tried his hand at theology in a treatise on the coming millennium.

That old Boston had a chronic habit of fault-finding with its best men is shown by a petition of Master Cheever to the colonial governor, Sir Edmund Andros, in 1689, after he had already been fifty years at his work, that his arrears of salary might be paid and his position secured to him. He died in 1708, at the age of 94. He was the educational patriarch of the colonies, a contemporary of the founders of at least four of them, and assisted largely in the schooling of two generations of the foremost people of the day. He was buried from his own school house, the public authorities of the colony appearing in state at his funeral. Among his "proud and stiff" quirks is recorded his abhorrence of periwigs, then in the height of fashion. "He wore his own beard long and pointed, and when he stroked his beard to a point, it was a sign to the boys to stand clear." Dr. Cotton Mather, one of his pupils, preached his funeral sermon, from which it is a comfort to learn, New Haven to the contrary notwithstanding, that Master Cheever "dy'd a candidate for the first resurrection."

But Master Cheever was only the most notable figure in a generation of these stately and faithful old pedagogues, who, from 1633 to the close of the Revolutionary era, not disdaining the aid of the good dames and schoolmistresses who prepared their work, held the rudder of the infant civilization through the turmoil of a hundred tremendous years, dealing with issues of incomparable moment to the cause of liberty and union in the Republic that was to come.

The final outcome of a system of popular education upon the character and history of a people is not so much to be estimated by a careful inspection of its methods of organization, administration, and instruction, as by its scope and spirit and the relation of the school to the general life of the community. One of the penalties of a highly developed civilization is a general intensity of living that forces every man and woman into a corner to battle for a position always in peril, while the broad common interests on which the national character and destiny depend are more and more delivered up to the despotism of a body of officials whose superior technical skill is often acquired at the expense of the larger gifts and graces of a wise and generous manhood. No competent observer will deny that the elaborate public-school system of a great American city, even of a considerable village, is in many respects superior to the old-time Boston school of a hundred years ago. But this superiority is purchased by an almost complete loss of the intense interest in the school by the family and church and, too often, the entire neighborhood. The hard and fast rules and regulations of the school board of to-day; the difficulty even of comprehending the goings-on and the ways of doing things inside the schoolroom; the despotic claim on youthful time and energy, in and out of school hours, by the inevitable demand of the enlarged and improved courses of study; the improbability that any personal appeal to the authorities can be tried on its merits—all these disabilities tend to a loss of interest by the vast majority of the patrons of the school. The result is that the school comes to be regarded, like Congress or the courts, as one cog of the stupendous machine by which society is propelled in these days of sharp division of labor.

But the final outcome of any system depends on the question, To what an extent is it a vital part of the best life of the whole people? If through the schoolhouse, though but a log shanty in the wilderness, flows broad, deep, and clear the current of the most intense faith, energy, and consecration of a body of immigrants, just beginning the creation of a new state, that school, spite of a hundred defects of management and an antiquated style of instruction, will produce the great men and noble women that build republican states and make history in a new world.

Whatever may be said, and a good deal can be said, of the numerous defects in the colonial system of popular education herein described, it was, to a far greater extent than the present common school, in a daily and hourly vital connection with the whole body politic. Instead of a government by boards of officials, elected at long intervals amid the confusing and exasperating conflicts of partisan politics, the people of old Boston, Roxbury, Hartford, New Haven, and all lesser towns had their hand on everything going, even to the "stiff and proud" deportment of deacon, deputy, occasional preacher, and schoolmaster, Ezekiel Cheever. The tremendous concentration of life upon public affairs, church, school, and state, set the entire force of a powerful community behind the humblest common school. The children might partake of a diet of conic sections, Latin, the Bible, and the hornbook, as the common diet in school was; but all the while they were going through the first drill of the "awkward squad" which, through the often ludicrous experiences of "training day" and the muster field, brought out the soldiers that fought at Louisburg, Bennington, Saratoga, and Yorktown, and, under the lead of a crowd of extempore rural generals, assisted powerfully at the later "bushwhacking" of the British Empire across the Atlantic and beyond the forty-ninth degree of north latitude.

It was not alone the superior intelligence of the New England people that accounts for the magnificent outbreak of fighting patriotism at Lexington and Bunker Hill; for the hoisting of a whole section of the Tory "upper crust" of New England out of the country "for good and all" at the evacuation of Boston, and for the profound influence upon the new Republic of these colonies, inferior in population and in several kinds of influence to their powerful central and southern neighbors. It was the phalanx-like organization of New England society for one hundred and fifty years, a concentrated community of people who knew just what they wanted and proposed to get it at all hazards. For more than half a century before the memorable day of Lexington these people had virtually lived with arms in their hands. At one time one-sixth of the entire population was on the northern border, among the dark woods and gleaming waters of the Adirondack wilderness, in New York, braving the threat of imperial France to cut off that mischievous New England from the remainder of the British colonies and destroy them in detail. When Burgoyne marched forth from Canada on the same errand, to sever the concentrated brain from the long-extended body of the colonial revolt, the same relentless phalanx of "embattled farmers" blocked his way, leading him and his captured army back in sight of the Old South Church and Faneuil Hall.

The war of the Revolution was largely fought out by the people of the northern colonies, and the supply of fighting men was in almost exact ratio to the activity of the provinces in the education of the people. Massachusetts and Connecticut, the two foremost provinces in the school, sent to the field, in militia and continental troops, 130,000 men; more than half the soldiers that fought through the war, which, added to the contingent of New Hampshire and Rhode Island, 25,000, make 155,000 of the 218,000 soldiers enlisted for the war, from New England.

New York sent 21,000, Pennsylvania 33,000, New Jersey 16,000; in round numbers, 70,000 from the three middle provinces. The entire southern colonies, almost equal in population to the northern, furnished a group of magnificent civic leaders and the one supreme military commander; but, in fighting men available for field duty, outside the home and border guard, furnished in all 75,000; Virginia furnished

nearly one-half, and South Carolina 6,417. It was one of the historical parallels that are more than accidents that Lexington Green, where first the old and new Anglo-Saxon world met in arms, is now overlooked by the monument commemorating the fallen heroes of that "glorious day" and by the modest building where Horace Mann, more than sixty years later, on the 4th of July, opened the first State normal school in America, with three students. Six years ago the same town, Lexington, made the great step forward that will span the gap between the rural and city common school by building a model schoolhouse and making arrangements by which the children of the town may all be carried daily at public expense to receive the best instruction in the power of the people to afford.

General Washington, on arriving at Cambridge, Mass., as commander in chief of the revolted colonies, was somewhat worried at the off-hand, independent, free and easy ways of his Yankee recruits. But he soon discovered the metal of his new soldiery. He said: "At the end of the war the army was practically composed of New England soldiers." After his retirement from the Presidency he said to a visiting Englishman at Mount Vernon: "I esteem the New England people greatly. They are the stamina of the Union and its greatest benefactors. They are continually spreading themselves, too, to settle and enlighten less-favored quarters. Dr. Franklin is a New Englander." The outcome of this "spreading themselves" above the southern boundary line of Connecticut was due, in no small degree, to the intelligence and mental activity generated in the old colonial common school, academy, and college. And beyond that was the fact that every New England man or group of good people that has "gone west" for the last one hundred years has carried along the prayers, the personal confidence, and financial good will of a prosperous, intelligent, and determined community left behind. Thus the five elements of the old New England civilization, declared by John Adams to be "Free labor, a free church, the district school, town meeting, and training day," have been planted anew on virgin soil, first in western New York, later in the northern section of the original Northwest, thence onward to the Pacific Slope, where, enlarged to meet the exigencies of a cosmopolitan population, they have borne a new crop of mighty Commonwealths that will never "forget the rock from which they were hewn" in any day of evil omen to come.

If we have seemed to dwell with undue emphasis and elaboration on the early colonial educational history of New England, it is because of our conviction that here were laid the broad and deep foundations of the American common school. To the preservation of that most original of American institutions must the people of the United States look, through all time to come, for the support of a democratic republican government, in the American sense of these words of many uncertain meanings—Republican and Democratic. But it will now be a not less agreeable task to trace the more leisurely evolution of the common-school idea of the 9 colonies of the center and the south during the same period. It will appear that the difficulties in their case were not so much the hostility or indifference of their people to education, either in a general or popular sense, as uncontrollable conditions in their original settlement. All but one of them was projected and established on a commercial basis. Their immigrants represented such a variety in nationality, class, religion, and political ideas that the public energy, available in New England for a united educational, ecclesiastical, and social life, was absorbed for more than a century in learning the great American art of living together. This was an achievement in its way as important as anything in the new nationality, and sure, "in the fullness of time," to bring every Commonwealth into line with the only institution competent to educate the generations into a national civic union—the American common school.

THE BEGINNINGS OF THE AMERICAN COMMON SCHOOL IN THE CENTRAL AND SOUTHERN BRITISH PROVINCES OF NORTH AMERICA BEFORE THE WAR OF INDEPENDENCE. 1607-1776.

EDUCATION IN VIRGINIA AND THE PROVINCES OF THE SOUTH.

The relation of the four leading New England colonies to the nine British provinces beyond the Hudson River and bordering the Atlantic coast, in the inauguration of the American common school, may be fitly regarded under the figure of the orchestra and the opera in one of the majestic musical dramas of Wagner. First appears the orchestra, and through an elaborate introduction announces the theme. Then follows the inspiring drama, a marvelous combination of musical, artistic, scenic, and architectural effects, emphasized by the uttermost achievement of the human voice, to present the conception of the great composer. But all through the long-drawn evolution of the splendid creation the orchestra again and again reappears, recalling the wearied and confused listener to the radical theme, as if there were imminent danger that, out of the splendor of its abundance, the glorious spectacle of human destiny enacted on the stage would overpower and obscure the profound central idea of the master of many arts.

Thus, for more than a century and a half of provincial life, from 1620 to 1776, it would seem that the providential mission of the New England British provinces of North America was an elaborate experimenting on the radical idea of the coming Republic; that the people are competent of themselves, without the intervention of priest and king, to initiate and control, through their own elected representatives, all the fundamental institutions and agencies of human society. In its way the situation of the Puritan people during this period was not dissimilar to that of the Hebrew people in Palestine, or the people of Great Britain sixteen centuries later—shut up to themselves to work out a religious and civic polity, with only an occasional interference from without, which never amounted to a suppression and only acted as a stimulant to their intense and original activity.

In no respect was the providential call of the Puritan fathers of American civilization more evident than in their experimenting with the bottom fact of human society—the education of the children. Like all the colonies, the parents of New England brought to their new home the old educational forms of parental instruction. They brought the parochial church school; the “free grammar” school or academy, chiefly a private corporation, but open to students of every creed, not free from tuition, at times subsidized by the State, often chained to the creed and polity of an exclusive church; and the college, a group of which constituted the English organization of the university. As far as this and almost everything that could be evolved from the British European idea of education in the seventeenth century is considered, the New England colonies were not essentially in advance of their neighbors except in the vigor of their educational public spirit, the intensity of educational interest in the family and church, and the number and quality of all sorts of schools.

But, just at this point, comes in the chronic misapprehension of the majority, even of educational American historians, concerning the development of the educational life of this early period. The numerous authors of the almost innumerable histories of the United States are generally confused and sometimes misleading on this point. A recent life of Thomas Jefferson, published in the interesting series of American Statesmen, devotes less than 5 of its 350 pages to the most cursory mention of the educational ideas and labors of the author of the Declaration of Independence. The local historians of American education too often appear like men crawling through the dense underbrush of a vast forest realm, lost to themselves and hidden from their readers, never appearing upon the open hilltops of observation, where an intelligent overlook of the entire field can be obtained and the tendencies and characteristics of educational affairs be apprehended.

It is to this chronic failure to obtain the real point of view that we must ascribe the controversy that periodically breaks out between the educators of different portions of the older States on the claim of priority in the beginnings of the American common school. The one element that the American people has added to the combination out of which this institution has been developed is the initiative of the people in the establishment, organization, support, and supervision of the education of every generation for the high functions of American citizenship.

Here, beyond question, the New England colonies have "the right of way," practically, for the entire century and a half before the Revolution. There were schools, and often good schools, of many sorts, supported by the church, by colonial legislative grants, by taxation of the people, by private corporations, by associations of neighbors, by family tutorship, in all the American colonies before that date. But in no colony beyond the Hudson River prior to the declaration of American independence was there anything like a colonial system of common schools for all children, organized, supported, and supervised by the whole people through their duly elected representatives, always in their own hands for revision, improvement, or modification of any and every sort. And in giving this fundamental idea to the original school life of the country the New England colonies contributed the one indispensable motive power that has made the present system of American education essentially different from that of all other Christian nations; the one essential element that, while preserved, can be relied on to overcome all defects of quality and method, and "in the fullness of time" make the educational life of the Republic, like the Republic itself, a model for every free people on the globe.

It is now the place to examine, as briefly as the great importance of the investigation for the purposes of this essay will permit, the educational ideals and habits of the American colonies beyond the Hudson River during the colonial period. This includes the three central provinces, New York, New Jersey, and Pennsylvania; and the six, usually regarded as the Southern or the slaveholding States till 1865, Virginia, Maryland, Delaware, North Carolina, South Carolina, and Georgia.

We shall best appreciate the educational position of New England during this formative period by contrast with the colonies that were in some essential respects farthest removed from the ideas and policy of the Puritans. Of these six Southern provinces, Virginia was earliest settled and, until the close of the great civil war, incomparably the most powerful and influential in national affairs. Here we shall best discover the prevailing idea of education brought from England, and here can we trace the early beginnings of the common-school idea until it flamed forth in the splendid conception of a State and national system of education in the magnificent but abortive plan of Thomas Jefferson, the foremost educational statesman of that early time.

But, first, let us endeavor to understand the fundamental idea of society that appeared in the settlement of Virginia and thence was reproduced through all the States of the South for the two hundred and fifty years before the great civil war of 1860-1865. We shall then better appreciate the social ideals of the people of this and the neighboring provinces; better appreciate the growing conflict between the old and the new and the outcome of the contending forces of society in the schooling of children and youth.

In more than one respect Virginia is the most characteristic representative American State. It was the first American colony, settled in 1607. In 1630 its western county, Orange, included the entire region from the Blue Ridge Mountains along an indefinite southern boundary line toward the setting sun. Later a treaty with France reduced its domain to the immense realm east of the Mississippi, including the present Virginia, Kentucky, West Virginia, and the five original Northwestern States.

At the close of the Revolution, Virginia ceded her somewhat visionary right in this entire region north of the Ohio River, beyond West Virginia, to the Nation, and recog-

nized the new State of Kentucky. In 1861 West Virginia, following the example of the mother State, "seceded" from Virginia and became a vigorous companion of the great Northwest. The Virginia of to-day is still one of the most favored of American States in situation, climate, boundless resources, and undeveloped opportunities, capable of supporting a population of 10,000,000 with no hindrance to any reasonable aspiration of future eminence.

Its history is the central romance of American life; a mighty drama, wrought out amid a wonderland of natural beauty and sublimity by a people not inferior in original capacity, ambition, and persistence to any in modern history. But its special interest to us in the present study of the American common school is its representative character and office in the making of the nation. It was the first experiment of Old England to reproduce itself in the New World. Virginia was not colonized on any theory, but was, for one hundred and fifty years from its settlement, a great "shining shore" across the western sea toward which streamed "every sort and condition" of the Protestant English people. In its order of society, form of government, established church, and sharp distinction of social classes, it was a fair representation of Protestant Great Britain before the great English revolution of 1689.

But no Anglo-Saxon people can remain an annex or imitation. Immediately this new colony took up the radical conflict of "the classes versus the masses," of which Mr. Gladstone talks to-day. With characteristic pertinacity the Old Dominion stuck to that text, elbowing off successive empires of territory that would embarrass, keeping outside the entire drift of later European immigration that would compromise, and only holding fast to the negro, whose status of slavery for two hundred and fifty years gave incredible advantage to the dominant class. As in every European nation, this conflict finally exploded in civil war; the powerful and persistent class that had ruled Virginia and led the entire slaveholding section of the Union, staking everything, even to the dissolution of the Union, on the perpetuation of its control of the only nation in which it was willing to abide. Never was this great battle of the ages more splendidly fought out; never by a more illustrious representative of the aristocratic order; never by the more potent magnetic power of the superior class to confuse and use the masses of the people; never with more phenomenal courage in its soldiery or higher personal character and more consummate military skill in its commanders, than in the four terrible years through which Old Virginia defied the great Republic in sight of the dome of the national Capitol.

And never was victory more decisive than in the annihilation of that magnificent dominant class as a rival power in American affairs in the fall of Richmond, a generation ago. To-day Virginia is a people's State, only governed by its dominant party as long as it does the will of the white masses. And here is being wrought out, more completely than elsewhere, the destiny of the negro—first landed on its shores as a savage, a pagan, and a slave; now endowed with all the rights of citizenship; educated in the common schools; on the whole, perhaps, better off than anywhere else. And most amazing of all the wonders of American history is the spectacle of new Virginia striking hands with the Northern Christian people and the National Government in the training of the negro and the Indian for American citizenship in the Hampton Normal and Agricultural Institute, in full view of the beach smote by the prow of the first Dutch slave ship in 1620.

How this wonderful conflict has gone on—the prolongation of the old English fight among the people most thoroughly Anglo-Saxon on this continent—and what its final issue portends, as an object lesson to motherland across the sea, is beyond comparison the most instructive, thrilling, and suggestive story yet told in the New World. What may be in store through the coming years for a Commonwealth that, after this fashion, has fought out the tremendous problem of the classes versus the masses to its finish, is one of the most interesting and inspiring themes of moral speculation and social philosophy. Out of the Old South, represented by the Virginia of the past, is to come the most thoroughly original literature of the American

continent. Out of the New South, burdened with the final social problem of humanity—the demonstration that all races of men can dwell together in a Republic in freedom, order, mutual appreciation, and mutual helpfulness—is to come the final decisive proof that the Christian religion is the one power and the Divine Man the one leader, whereby the awful distinctions and repulsions in our humanity, before which paganism, secularism, science, and culture stand aghast, may be reconciled in the kingdom of God on earth.

The old assertion that Virginia and the South were settled by the Cavalier, as New England by the Puritan, is an exploded romance. The few legitimate representatives of the British nobility and gentry, largely "bad boys" and broken-down clergymen, who drifted to Virginia in the one hundred and fifty years before the Revolution, were little more than a disturbing element until the breaking out of the war sent the majority of them trooping back to the old country. "The classes" were represented, in the old Dominion, by the great body of landholders—chiefly slave owners—that practically owned the country from the Alleghanies to the sea for more than two centuries. This class was a composite body; most nearly allied to the farmers and country squires of the old home, including a small contingent of early Germans and a considerable class of settlers from the Northern States. It was not "blue blood," so much as the opportunity of a new country for the possession of great estates and the ownership of slaves by any competent man, that finally welded together that powerful dominant class on the Southern Atlantic seaboard, recruited from everywhere, perpetuated in the Southwest, perhaps in original ability and practical faculty the ablest aristocracy in Christendom, that defied the Union in arms in 1860.

"The masses" in the Old Colony for more than a century were represented by the people who, for various reasons, could not reach this position; crowded off into the western wilderness or held in a turbulent vassalage at home; outside exceptional youth, almost denied the opportunities for even elementary education; shut out from the main avenues to success. Out of the superior class came occasional leaders of a popular movement which now and then flashed forth with a portentous glare through the monotony of the old colonial life.

The first experiment of settlement on the coast of the Old Dominion by the Virginia Company floundered on for twenty years through a series of blunders and disasters. Ten thousand people, too many of the sort that should never leave home save for a riddance or on a forlorn hope, were landed upon a new country, and, but for a small minority of the superior sort led by Capt. John Smith, the enterprise would again and again have gone to wreck. As it was, nearly twenty years after the first arrival, but 2,000 of the 10,000 remained, and they with but a flickering hope of success. Here was small opportunity for the growth of the educational spirit. The few reliable families probably took such care as was possible of their own children and the church and clergy followed the old English way of "feeding the lambs" according to the quality and stock of the breed.

For full half a century all the movements for establishing schools of any sort appear to have originated at home from the religious zeal of King James I, the romantic idea of converting the "infidel savages" to Christianity entertained by the dignitaries of the Church of England, and from the benevolent desire of a few men of unusual intelligence and missionary spirit to do something for a settlement that had already become a problem more complex than any of the theological disputes that vexed the faithful.

At an early date there appears to have been a movement in England to raise funds, with a somewhat undefined purpose of schooling the Indians. In 1619, under the patronage of Sir Edward Sandys, a board of eminent gentlemen was formed in England, including the Earl of Southampton, the early friend of Shakespeare, to establish a "college," and the legislative body made "humble petition" to the King to aid in the enterprise. Ten thousand acres of land were set apart for "a university," 1,000 of which was to be appropriated for an elementary school for "the conversion

of the infidels." Private gifts were added, the King made his donation, and a plan was formed for the instruction of Indian children from the age of 7 to 12 "in reading and the principles of Christianity," and a subsequent training in trades till 21, with the intention of merging them in the general body politic. The great estate was occupied and a manager appointed. Rev. Mr. Copeland, from the East Indies, worked vigorously in behalf of the movement. Mr. Dike was sent over to be the principal of the elementary school at Charles City, with a rectorship and provision for support. A squad of workmen were shipped across the Atlantic to erect the buildings and high hopes were excited.

But the entire plan was largely "in the air." The only part of it that had a fair chance of pecuniary support, the Indian school, at once ran against a twofold obstacle—the unwillingness of the Indians to intrust their children to the suspected white newcomers and the reluctance of the settlers to assume the care of preparing the young savages for entrance to the seminary. The school was brought to a violent end in 1622 by the first Indian massacre, in which the director of the estate, a portion of the workmen, and 300 people were slaughtered by the "infidels." It does not seem very clear whether anything except this impracticable Indian school had at any time reliable means of support. The entire scheme, like so many of the vast and romantic plans of zealous prelates and a benevolent gentry in England for the conversion of the natives, collapsed on the first contact with the stubborn facts of the situation. Probably the first school text-book made for American use was a little primer constructed by the nephew of Bishop Hall for "teaching English to those of inferior station and in all rude countries." The funds of this abortive venture were finally diverted to a school in the Bahama Islands, where Copeland, the chief actor in the Virginia enterprise, went to die. This adventure, magnified by enthusiastic local narrators to the rank of the first attempt to establish a university in the New World, was too early and too absolutely without foundation in the sense of educational need among the people to be successful, and its violent end probably saved it from a more humiliating collapse.

Another even more eccentric project for establishing "a college" on an island at the mouth of the Susquehanna River, on which its visionary projector spent a comfortable fortune, speedily traveled the same road to ruin. Meanwhile a band of Puritans from England had effected a settlement south of the James River, and seemed to be well on the way to the establishment of a prosperous local colony, with fair hope of the inevitable school that always sprang up from the sowing of Puritan seed. But the jealous colonial governor worried the obnoxious colony till, after rejecting a proposition to move to the Bahamas, it effected a lodgment in Maryland, where it did yeoman's service in the building up of that State.

From time to time other benevolent individuals made gifts of money and land, "milch cows," and various useful appurtenances to establish local schools. It was the old English habit of eminent and pious men giving their name and means to the founding of a school, under the control of a close corporation, generally bound fast to a special church. Several of these seminaries appear to have had a greater or less term of success, and by 1660 there were, scattered about the sparsely populated wilderness in which the colony still remained, a number of little colonial academies and several "petty schools." But the better sort of the Virginia folk who could afford it sent their sons to England for education. The girls were taught at home or in small private classes by tutors and governesses. The clergy of the Church of England, then the State church of the colony, and every way as intolerant as the Puritan Church in New England, kept at their old-time educational work of instructing such youth of the respectable class, with a few of the poorer sort, that were put under their charge. George Washington seems to have had no educational opportunity beside the regulation "field school" and a family group of children under a master in the home of his brother Lawrence. He "graduated" at 13, making a big pile of neatly written manuscript schoolbooks, still in existence in the library of the State Department at Washington.

But better days were dawning on the disturbed Old Dominion. Her people, by dire experience of famine, were slowly learning to appreciate the blunt deliverance of Capt. John Smith: "Nothing was to be expected from Virginia but by labor." Repeated terrible experiences of savage perfidy and ferocity had disposed of the early romanticism of converting the Indians to Christianity, civilization, and citizenship through the benefactions and benedictions of pious churchmen in England, while the people in contact with the "noble savage" were rapidly coming to the conclusion that unless the Indian priests had their throats cut there was no hope to bring the Indians to conversion. Meanwhile, the absorbing pressure of public events was enough to fully occupy the people that remained and challenge the uttermost activity of all newcomers to this land of mighty promise.

In 1624, after sixteen years of desperate attempt at living under the inefficient régime of the two Virginia companies, King James I abolished the London company, which, in its turbulent goings on at home, had become a thorn in his side from its assertion of rights incompatible with the royal prerogative, and proposed to govern Virginia by a personal administration. His death cut off this heroic essay. The attempt of Charles I to carry out this plan, like all similar efforts of that unfortunate sovereign, converged upon the closing scene when—

King Charles at Whitehall
Stepped out to exchange royal robes for a pall.

Had old England been as loyal to the Stuart kings as new Virginia, all this would not have come to pass. The colonies stood by their unhappy monarch in the hopeless way that was alone possible, and welcomed with open arms the crowd of Royalist immigrants who fled across the sea to escape the stringent administration of the Commonwealth under Oliver Cromwell. Governor Berkeley consented to nurse his wrath in tolerable quietude on his big estate during the rule of the three governors appointed by the great Protector. Cavalier and Roundhead agreed to enjoy their own good old Virginia life together, despite the turning of things upside down at home. Of course, there was great "joy and gladness" at the restoration of Charles II in 1660, and staunch old Governor Berkeley came back to his chair of state, in which he sat for nearly thirty years.

But meanwhile a notable change had been coming over the spirit of the leading colonists. The inevitable conflict of the "classes *versus* the masses" had been long since inaugurated by the persistent assertion of large local powers by the house of burgesses, representing the people, as against the royal government and council that stood for the sovereign power. The colony was now divided into 13 counties, represented by 35 burgesses, elected by the votes of landholders and householders alone, representing the respectability of the country. In 1648 there were but 15,000 people, 300 African slaves, and a larger contingent of indentured white servants, having no public rights until the expiration of their term of service. But in 1670 the new drift of immigration had raised the population to 40,000, with 6,000 white and 2,000 colored people "in service." Gradually the always somewhat indefinite colonial distinction between Cavalier and Roundhead was becoming even more uncertain by the substantial agreement of the more influential sort of folk that Virginia, in respect to affairs of local concern, was now competent to steer herself. In the interregnum between the abdication of Richard Cromwell and the coming in of Charles II, the assembly voted that—

"Whereas by reason of the late distraction [which God in His mercy put a sudden period to], there being in England no resident, absolute, and general-confessed power,

"Be it enacted and confirmed, That the supreme power of the government of this country shall be resident in the assembly, and that all writs issue in the name of the grand assembly of Virginia, until such a command or commission come out of England as shall be by the assembly adjudged lawful."

Governor Berkeley was reinstated in his governorship by the same authority.

But now the conflict was transferred to the home field. The newly installed Stuart régime proved even more disastrous to the interests of Virginia than to the people of the British Islands. The oppressive trade and navigation laws made prosperity impossible. The blundering monarch, "Who never said a foolish thing and never did a wise one," had actually made an offhand present of the whole domain of Virginia to two noble favorites, for thirty-one years, with an indefinite and indefinable power for mischief. During the régime of the Commonwealth, in 1655, a large body of freemen had already been disfranchised and the suffrage limited to "freeholders and housekeepers." The absolute and stupid petty tyranny of old Governor Berkeley, with his neglect to protect the people from the hostile Indians, conspiring with these causes of discontent, awoke a spirit of revolt, culminating in the famous rebellion of Bacon, in 1676, which, but for the sudden death of its brave and resolute leader, might have hastened many things. It was significant that one of the complaints of the revolting party took the form of the blunt question: "What arts, sciences, schools of learning, or manufactures have been promoted by any men in authority?"

It was high time that this question was put and answered. In reply to an inquiry from the home government concerning the state of religion and education in the colony, the testy old governor had snarled back that there were 48 parishes and the clergy well paid, but according to his notion "it would be better if they would pray oftener and preach less;" that "the people, as in England, taught their own children;" closing with the memorable deliverance: "I thank God there are no free schools nor printing, and I hope we shall not have these hundred years; for learning has brought disobedience into the world, and printing has divulged them and libels against the best government. God keep us from both." The benevolent apology for these very plain words, characteristic of the opponents of popular enlightenment in all ages and every land, by some of the later educational historians of the Old Dominion, hardly seems to dispose of the accepted understanding of the facts. The author of "Virginia," in the series of American Commonwealths, himself thoroughly appreciative of the early life of his own State, declares that "thirty years later than this there was but one free school and a few field schools in the colony." It was, certainly, none too early that a people, containing such elements of power and progress as this rapidly growing colony, should cease to be dependent on the makeshifts of educational life on which they had subsisted for more than half a century.

For by this time a most important new strata of population had been formed in the Virginia colony, largely from the coming in of respectable and occasionally distinguished people, representing the Royalist party during the progress of the "great rebellion" at home. Numbers of these people came across the water during the Protectorate, and, not being in good odor in New England, naturally drifted to the province that had been faithful beyond all in the darkest hours of the Stuart dynasty. The accession of William and Mary to the British throne in 1688-89, made a return to England by this class anything but agreeable. The result was that, during the generation ending in 1670, there had been landed on the shores of the Old Dominion the ancestors of a majority of the illustrious group of men who led the State into insurrection in 1776, and before the close of the eighteenth century had made Virginia a name of power for all time throughout Christendom. The ancestors of nearly every eminent Virginian of the Revolutionary period, including Washington, Jefferson, Madison, Mason, Henry, Pendleton, Carey, and Peyton, had been royalists during the "late unpleasantness" over the sea.

But, transferred to a new land, brought face to face with the rough realities of the infamous government of the Stuart restoration, threatened not only with the loss of material prosperity and the suppression by James II of their own State religion, but also the absolute loss of title to their own lands by the whim of the minions of their miserable sovereign, the native Anglo-Saxon passion for personal liberty grew apace. These forty years of the life of the province were crowded with

the prophecy of the greater era, yet a century delayed. And among the striking contradictions that make the history of the South more romantic than romance itself, is the fact that one of the early students of the new State Normal School for Girls at Farmdale, Va., was a descendent of the same Governor Berkeley who cursed learning and printing, "in God's name," some two hundred years before.

Out of this fertile new strata of Virginia society, almost a new dominion, and not from the logical development of the original educational spirit of 1608, came the demand for a school of the higher learning, to which these people, many of them of a well-educated ancestry, could send their own sons, without the expense and complications of a college career over the water. As early as 1660 the colonial assembly moved to this effect, requesting that subscriptions be solicited at home and abroad to establish a college and free school at the earliest opportunity. But this commendable resolution, in characteristic colonial style, "hung fire" for thirty years. It was not till 1690 that the local gifts, by public and private donors, supported by the royal bounty of £2,000 and 20,000 acres of land, with a tax of a penny a pound on all tobacco exported to the neighboring colonies, and the fees belonging to the appointment of surveyors of lands, reinforced by various minor taxes, scholarships, and emoluments, and backed by a royal charter, set the famous College of William and Mary actually on its feet. The new institution was intrusted by the royal charter to a board of 18 local trustees, with ample powers, and it had a representative in the general assembly. The curriculum included "Divinity, philosophy, languages, and other good arts and sciences." A grammar school for the preparation of students was attached in due time, and in a few years, by the charity of Robert Boyle, a department was added for the education of Indian youth.

The moving spirit of this important venture was Rev. James Blair, commissary of the bishop of London for Virginia. He it was who took up the lagging enterprise in 1691, went to England, and persuaded the joint sovereigns to endow, charter, and give their name to the institution. Attorney-General Seymour tried to block the wheels, and when the reverend petitioner mildly suggested, "Virginians, too, have souls to save," blurted out, "Damn their souls; let them make tobacco!" Dr. Blair became the first president of William and Mary College, holding the office till his death, in 1743. He was the first educational statesman of Virginia, and in some ways was a champion of "the new education" in this early day. He brought men of ability to the chairs of instruction, enlarged the scope of the regulation college curriculum, and put his best life into the work. But even he, backed by all the rising educational spirit of the colony, could neither at once nor ever afterwards make it a people's college, according to the broader fashion of Harvard and Yale. It was never in any special way a representative of or in any shape at all governed by the people of Virginia. The president, till the Revolution, was always the bishop's first man in the colony and represented the primacy of the Established Church of Great Britain and Virginia. The professors could only be members of this church, and were even "hedged in" by a monastic vow of celibacy, violated only on peril of expulsion.

The institution was munificently endowed, according to the practice of the day. In comparison with its munificence, Harvard represented the Puritan age of home-spun. But while the New England colleges were born out of the heart of the earlier colonial life of Massachusetts and Connecticut; established, supported, and, through all their earlier history, administered largely by the representatives of the people; kept in the most intimate relation to the common schools through the services of their graduates and students as teachers; while Harvard, and at first Yale, was not bound by any ecclesiastical creed and test, William and Mary, till the Revolution, remained essentially a British colonial organization, representing in this respect the intensely aristocratic ideals of the ruling class in the Old Dominion. The accident of its location at Williamsburg, the new capital of the province, was a great advantage to its faculty and students, who, during the sessions

of the assembly, enjoyed a relief from the monotony of life in a village of 1,000 people through the presence of the gay and festive spectacle of the wealth, fashion, and eminent ability of the entire colony. It was also an advantage to the college to have a hold on the State funds, through the avails of various taxes and the licensing of land surveyors. But we shall not easily find in anything peculiar to the school itself good reason for ascribing to it special eminence as the great American pioneer in what is now called university instruction in civics. Neither can we believe that George Washington, who was never a student and only knew William and Mary as a boy in connection with his licensing as a land surveyor, was through its influence "developed into the foremost statesman of America," although he was its honored chancellor at the end of his career, which, as much as is permitted to any genius of his sort, was that of an American self-made man.

Lord Macaulay has well put the fact, in one of his remarkable speeches on education in Parliament, that the foremost men of every historic period are generally educated through the type of school and methods of teaching then in vogue. It was not remarkable that among the graduates of William and Mary College, for almost a century the sole representative of the higher education south of the Potomac River, should have been numbered "27 soldiers of the Revolution, 2 attorneys general, nearly 20 members of Congress, 15 Senators, 17 governors, 37 judges, a lieutenant-general and other officers, 2 commodores, 12 professors, 4 signers of the Declaration of Independence, 7 Cabinet officers, a Chief Justice, and 3 Presidents of the United States." There were 70,000 people in Virginia at the end of the eighteenth century, and 150,000 in the Southern colonies, of which Virginia was the head and front. The fact that from such a population, with a fair proportion of aspiring and studious youth and a surplus of vigorous executive capacity, only 100 students could be gathered up to the close of the war of the Revolution, points to the most significant fact of its early history—that, spite of its antiquated organization, it received its patronage from, fairly represented the home ideal of education, and was identified with the progressive life of the Old Dominion. The majority of the promising boys of all these Southern colonies, belonging to the leading families, especially in South Carolina, were still sent abroad for their collegiate and professional education. The other fact, that, spite of this and the eminence of some of its professors, the College of William and Mary was always handicapped by its hard and fast ecclesiastical organization, and at a later date lost its hold on the progressive life of the State through its opposition to the broad educational plans of Thomas Jefferson, receiving its deathblow by its refusal to follow the capital to Richmond and be elevated to the position of a genuine State university, is significant of the growing spirit of mental freedom in the State. To-day, under the auspices of the common-school authorities, William and Mary has a larger body of students, and is probably in some ways a more effective institution of learning than ever before, while under the lead of President L. G. Tyler it is becoming the center of a new spirit of historical instruction in the State.

The chief interest this old colonial seat of southern learning has to the student of the common school is the fact that the great educational statesman of Virginia and the new Republic, Thomas Jefferson, was one of its graduates. At the age of 14 he went there, with the preparation of a country private school in the far-off region of the Blue Ridge, and studied diligently for the allotted time of four years. But his chief opportunity there was evidently the influence of Dr. Small, professor of mathematics and philosophy, a born Scotchman, and the friendship of George Wythe, head of the Virginia bar, with the intense interest of a very young man in the sessions of the general assembly now shaken by the rising agitation of the coming Revolution. That he there exhibited any special evidence of interest in his subsequent career as the foremost educator of the State and one of the foremost of the Republic, does not appear. He certainly lived to find in his alma mater the most persistent opponent of his broad plans for the schooling of the youth of the new Commonwealth of Virginia.

From the foundation of William and Mary College, in 1693, to the outbreak of the Revolution, in 1776, more than three-fourths of a century, the history of education in Virginia is only a repetition of what we have already seen. The free schools gradually increased in number, and probably improved in quality; the wealthy folk continued to educate their children abroad and somewhat in the North; the young women were taught by tutors or in family schools at home. Even Jefferson seems not to have appeared as the public advocate of the elaborate system of popular education afterwards brought forward during his first term of service in the State legislature, in 1779. The thirty years before the outbreak of the war had been crowded with great and exciting public controversies, and the rising young lawyer and publicist recognized that there were many formidable barriers to be surmounted before the "glittering generalities" of the Declaration of Independence could be embodied in the social and civic life of the Old Dominion. The very citadel of the régime was found in the intense prejudice of the great majority of the planter class against anything resembling the common-school system of New England.

Probably the most vital educational influence in that direction was the very old-time plantation "field school," which was the sole embodiment of the people's desire for general education at that time. This was, at least, a voluntary organization, where a group of neighbors united for a school, supported by a tuition fee paid by its patrons, not dependent on the church or any outside influence, save the good sense of the parents and the willingness of the lively young Americans of the day to submit to school discipline. There must have been a good deal of valuable work done, with much of little worth, in these extempore organizations. George Washington owed all his elementary training, outside the home school of his brother and the discipline of his mother, to an arrangement of this sort. Here, in an awkward and imperfect rehearsal, was the prophecy of the "good time coming," when the whole people of Virginia, of every race and "all sorts and conditions," would be summoned by their gracious Commonwealth to the feast of knowledge.

It might have been from the observation of the painful inadequacy of this provision for the needs of the colony that, with scarcely an exception, the foremost Virginia statesmen of the Revolutionary era gathered about Jefferson and battled, with a hope beyond defeat, in a contest prolonged through almost another hundred years, for the realization of what was so nobly outlined in the conception and so eloquently enforced in support of the plan of this great educational reformer. It will be one of the most interesting features of this essay to note the first splendid outbreak of this desire for universal education in Virginia, at the close of the war of Independence, prophetic of the steady progress of the educational movement through various successes and defeats up to the final and complete adoption of the American common school by Virginia in 1870.

The original charter of the province of Maryland, granted to Cecil, Lord Baltimore, by Charles I, has no mention of education. But there seems to have been a somewhat earlier appreciation of the need of educational facilities by the settlers than in the neighboring colony of Virginia. The general assembly, in 1696 and 1704, passed two acts "for the encouragement of learning and advancement of the natives of this province," with a supplementary act imploring "his sacred majesty for the establishment of free schools." But their "sacred majesties," William and Mary, had other matters more directly concerning their own newly acquired prerogative and administration on hand, and there was little action under either statute. Here we note again the chronic Southern colonial habit of depending on the royal bounty, across the sea, for the schooling of their youth. The petitionary act, in 1696, implored "his sacred majesty" to establish a free seminary under the name "King William's School," and includes details of organization and courses of study. When the income of this school should exceed £120 a year another similar academy should be founded, so that ultimately there should be a "free school" in each county of the province. The result of this effort was the establishment of the school at Annapolis, now known as St. John's College.

For the century preceding the Revolution the colony labored at this plan of a "free school" in every county and two colleges on the eastern and western shores, to be united in one corporation, under the title, "The University of Maryland." A historian of this period speaks of the plan thus: "Intention good, machinery perfect, but no money is furnished to carry out good intentions." In 1723 an act "for the encouragement of learning and erecting schools in several counties within this province" was passed. It vested the management of a "free school" in a close corporation, with a plot of 100 acres of land for the master's foundation. There were then twelve counties in the province. These schools were only to be free of tuition to certain numbers of the poor. An effort was made to obstruct the coming in of "Irishmen" by a tax of 20 shillings on each immigrant from the Emerald Isle, with a 20-shilling tax on each negro imported; the avails of the tax to go to the support of the new schools. Here was a more advanced idea of popular education, not only as concerned the better class but also the poor, than in any Southern colony at this period. These schools, with the proposed colleges, were all to be free from a sectarian religious test, either for pupils, teachers, or administrators.

But the history of education in this province is the record of an almost hopeless struggle to obtain the funds for the support of the system.

After a brief success in developing the two colleges, St. John's and Washington, under one management, the project was abandoned and their public funds finally withdrawn and distributed among the counties for the support of the academies. Some £10,000 had been gathered as a general university fund and this remained the sole educational fund of the State until increased by the appropriation of the surplus revenue distributed by the United States Government in 1837. During the forty years previous to the war of Independence the effort to keep afloat this system of education by the combination of public and private support met with only moderate success. The colony was greatly agitated by the intestine conflict between the feudal government of Lord Baltimore and the uprising of the Protestant people, and a vigorous stirring up had been given by the Puritan contingent that had settled near Annapolis after being worried out of Virginia by Governor Berkeley. The result was the triumph of the popular cause and the temporary dispossession of the feudal proprietor.

But one good outcome of this anterevolutionary policy was the final establishment of the system of county academies or "free schools," somewhat resembling the later academical system of New England, with a permanent annual subsidy for each of \$1,200. Up to the close of the civil war, with the exception of the establishment of the common school system of the city of Baltimore, this was the nearest approach of Maryland to the common school for the education of all. The system had a tenacity that has endured till the present day. In 1865, when the State established its present system of education, these county academies were brought into the common school and, to-day, receive a yearly grant from the educational fund of the Commonwealth.

But here, as in all the Southern colonies before the Revolutionary epoch, we must avoid the hasty conclusion that this portion of the country was the abode of universal ignorance, from the lack of facilities for popular education. In all of them, in Maryland and South Carolina especially, from the first, there was a decided and growing cultivated class, educated abroad, by family tutors, by the clergy of the churches; in all ways by which devoted parents, through labors and sacrifices that honor our human nature, "train up their children in the way they should go," and wherever there was a church there was a fountain of education in the humblest administration of the Christian religion. Of whatever sect or nativity, unless absolutely unworthy of his high vocation, the priest, minister, rector, or rabbi was forced to be the perpetual schoolmaster of his flock. The reading of the Bible in the Protestant churches and homes of the early colonists was in itself a great education, and out of the deep fountains of spiritual and mental life in the Book of Books came a growing ambition for larger acquirements and for the power that comes from

general culture. And the life of a new country, most of all of the Southern province so beset by danger, tried by privations, and agitated by contentions, was a daily challenge to deep thought, ready wit, and decisive action.

So, when the call was heard, Maryland fell into line, and Catholic and Protestant, Calvinist and Quaker, were found in patriotic accord; each by his own characteristic method contending for the political emancipation of the New World. The Catholic Church, which here first established itself in the American colonies, and, to-day, maintains its primacy in Baltimore, was always a decided educational power, especially among its numerous members of the superior class. In any view of the educational condition of the old Atlantic South, even till the close of the civil war, practically up to the year 1870, these considerations must be kept in mind for a just estimate of the special and united force of colonies and States and as a commanding element in the development of the social and public life in the colonies and the nation.

The neighboring colony of Delaware was originally a border settlement, inhabited by a mixed multitude from Sweden, Holland, and other parts, alternately governed by the Swedes and Dutch. This mixed population and the rivalry between the religious organizations was fatal to any well-considered attempt at a system of general education. The clergy seem to have had the matter a good deal to themselves, and there is record of some vigorous and useful teachers among this class, always and everywhere the "men-of-all-work" in the building up of civilization. As late as 1791 Robert Caron, of Wilmington, Del., in a pamphlet entitled "A Plea for the General Establishment of Schools Through the United States," speaks with great contempt of the country schools of the little Commonwealth. "The schoolhouses are sorry hovels, neither wind nor water tight." "The teachers are largely foreigners, shamefully deficient in learning, and not seldom addicted to gross vices—a set of blockheads." "Country schools will remain in the present state of desperation unless incorporated with Government."

All the Southern, in common with some of the Central, colonies suffered from this nuisance, the educational tramp, frequently a broken-down fellow from over the water, wandering from place to place for a chance to teach. In Maryland some of the "redemptionists" and people brought over as "indentured servants" were utilized in this way.

But the fact that Delaware was the first State to come into the new Union and has never been far behind in contributing its share of ability to the public councils of the nation proves that here, as elsewhere, the people of the more-favored sort were not indifferent to the education of their children, and that in some of the numerous ways always open to him who has the will to do a good thing the work was accomplished.

The educators of North Carolina have good reason to protest against the careless assertions of some, even of the more eminent writers of the recent school of historical literature, for their misapprehension of educational affairs in the old North State previous to the Revolution. These writers have fallen into a prevalent habit of the Northern common-school educational narrators in testing the intelligence and interest in good learning in an American State, at an early period, by its adoption of a scheme of universal education similar to the present American common school. Tried by this severe test, there is no question that North Carolina would be remanded, with little ceremony, to the limbo of universal illiteracy and social obscurity to which she has been assigned, not only by some of the schoolmen of the North, but by the upper social strata of its neighboring States, Virginia and South Carolina.

With few exceptions there is no record of any act for the encouragement of education by the colonial legislature of North Carolina, either under the original rule of the lords proprietors or the subsequent government by the authority of the Crown, from the first permanent settlement of the colony, about 1660, to the Revolutionary epoch. The first act was a permission to the little town of Edenton to build a schoolhouse, a town fence, and other conveniences for an infant settlement, and

the second for the establishment of a free school, in 1749. As late as 1771, on the edge of the Revolutionary outbreak, the colonial legislature chartered Queen's College, at Charlotte, only to encounter a veto by royal proclamation. The Church of England was the ecclesiastical law of the land till the political tie was finally sundered between the provinces and the mother country.

One of the royal governors, Gabriel Johnston, a graduate of St. Andrews University, Scotland, made a vigorous assault on his legislature in behalf of general education, and was replied to, in fair spoken words, but with no further attention to the matter. There may have been other spasmodic efforts to galvanize this body into some interest for assailing the dense illiteracy beyond question prevailing among large sections of the "common people" of the colony. But it is safe enough to say that nothing in the nature of a beginning of the American common school, as it exists in the State of North Carolina to-day, was attempted or seriously thought of in the colony during the one hundred and fifteen years before the famous Mecklenburg declaration of independence in 1775 and the skirmish at Alamance, May 16, 1771.

But, as we again have occasion to suggest, there was no such wholesale neglect of education in North Carolina during its colonial era as would be inferred from the indifference of its government. For the first sixty years after the settlement in the pine woods along the shores of the great Atlantic sounds there was nothing that could be called a town. Of course, the spiritual leaders, including the missionaries of the Church of England sent over "to convert the natives," were very positive that all education outside their own particular conventicle was the high road to everlasting damnation. No general effort, like that of an active New England community, with all its people of one mind on matters of church and state and the need of training up the children and youth, was possible in a colony so physically and socially dispersed through what must have seemed the outskirts of civilized creation. And when, a generation later, the advent of the Scotch and North Irish Presbyterians in another portion of the province woke up the first notable revival in behalf of education, it was not probable that the colonial legislature, at the risk of a veto from the royal governor or the crown, would hasten to respond to the educational spirit of this portion of its constituency, or that the people themselves, vigorously pushing their own church life in the face of a hostile educational establishment, would accept the patronage of a government in league with a church especially hateful to the Presbyterian mind of that age.

So the educational life of North Carolina during the colonial epoch, such as it was, came up with no reference to the present common-school idea of the North Carolina of 1896. But, underneath this discouraging surface, to an impartial observer there was from the first a spirit among the people that brought out North Carolina as one of the first of all the fifteen Southern States in the support of a system of public instruction which, at the outbreak of the civil war, promised good results. On the coast the educational interest was chiefly among the superior families, of which there was a reasonable number. These people, like all of similar origin and social status in the South from the earliest settlement, were eager to preserve such heritage of good schooling as they had brought from the Old World. By tutorship at home, by gathering family groups of students, by the efforts of the clergy, and especially by sending their sons abroad or to the North for education, they kept alive the divine hunger and thirst for knowledge and good culture.

The Hill family, celebrated in the State, was of New England origin, and their first representative a graduate from Harvard and a schoolmaster. This and other families of the Cape Fear section were accustomed to send their boys to Harvard College for many years.

For a hundred years the seacoast region of the colony went on in this way; the superior class, by all practicable methods, secured the best education possible under such adverse conditions; the masses of the common people were left in a condition which may be inferred, looked at from the point of view of the emphatic words ad-

dressed to the legislature in 1736 by Governor Johnston, concerning their better-off neighbors: "To what purpose, gentlemen," says the old Scotch governor, "is all your toil and labor, all your pains and endeavors for the advancement and enriching of your families and posterity, if within yourselves you can not afford them such an education as may qualify them to be useful to their country, and to enjoy what you leave to them with decency?"

It was almost a hundred years from the original settlement before this unsatisfactory condition of education in the northern colony was changed by the advent of the Scotch and North Irish immigrants into a different portion of the province. From 1736 to 1770 two columns of this Presbyterian host moved upon North Carolina. The most numerous was a prolongation of the original movement from Pennsylvania and New Jersey into northern Virginia and the Valley of the Shenandoah; the other, a smaller but no less determined crowd, pushed northward from Charleston, S. C., along the great river highways that, under various local names, flow from the splendid mountain realm of western North Carolina through the lowlands to the far-off sea. The majority of these people were of the intelligent, industrious, and progressive type of the North Irish and Lowland Scotch; but there were also great numbers of Scotch Highlanders, implicated in the rebellion in behalf of "Prince Charlie," which went to wreck on the bloody field of Culloden. Out of this immigration came the first genuine educational impulse to the colony, and from the ranks of this vigorous population was recruited a long and goodly roll of men, eminent through the subsequent history of the State.

But these people were not yet interested in the common school, in the New England sense. The fact that the colony was still under the ecclesiastical domination of the Church of England was reason enough why the fighting brotherhood of the Covenanter stripe should give the colonial authorities "a wide berth." It was all they could do to build up their own churches in peace and to every church attach a parochial school. In Scotland, a hundred and fifty years before this period, we find the beginnings of what has become one of the most vigorous systems of popular education in the world. But in Scotland the Presbyterian Church was practically a representative popular government, built up by the masses of the people inside the shell of intolerant royal and aristocratic rule that only collapsed when the handsome head of Queen Mary Stuart rolled off the bloody block in Fotheringhay Castle. The Scottish Presbyterian Church and clergy were but the servants; and the schools, though tied fast to a stringent ecclesiastical creed and polity, were the schools of the people. But in nearly all the southern American colonies there was a legal or practical union of the civil power with the Church of England, of greater or less effect, up to the Revolution. In Virginia especially there was little peace for the dissenters through the entire colonial life.

It was inevitable that the whole body of dissenting people, rapidly becoming the working majority of the inhabitants, should make haste, at the first opportunity, to establish schools of their own, each denomination striving to become the rival of all others in the number and quality of its academical and collegiate foundations. And although these States, in due time, were completely emancipated from the shackles of an ecclesiastical establishment, yet the old prejudice held on. The very name "public school," organized, supported, and managed by the State, called up the old hateful specter of the colonial governor and legislature in league with the Established Church of Great Britain, and the common school was repudiated. This point must be taken into consideration in explaining the hostile attitude of the churches, which had been the leaders of popular instruction abroad, to the establishment of the American people's school system, especially in the Southern States.

But these new immigrants from the land of schoolmasters made haste, in their own way, to put on the ground the means of education for their own children. Every church, however obscure, had something in the shape of a parochial school. A vigorous body of graduates from Princeton College, New Jersey, already the headquar-

ters of this great and intelligent church, came into North Carolina from Pennsylvania and New Jersey or returned to their own homes in North Carolina and began the good work of building up schools of the better sort, out of which have since been developed some of the most useful academic and collegiate institutions of learning in the State. A long roll of these men, afterwards distinguished in all departments of the colonial life, is printed in the excellent Circular of Information of the National Bureau of Education on "The history of education in North Carolina."

Among seminaries of this description the best known seem to have been the Crowfield Academy, established in 1760, in Mecklenburg County, which has been called the germ of the present Davidson College. Another celebrated school, for the day, was the classical seminary established at Charlotte in 1767; afterwards developed into Queen's College. It was largely patronized from the neighboring counties of South Carolina, which were also settled by a similar population. The two efforts to obtain a charter for this seminary, as Queen's College, were defeated by the royal veto before the Revolution. But one of the first acts of the new State legislature, in 1777, was the incorporation of this flourishing academy, with the republican title "Liberty Hall."

But the most celebrated of all these colonial schools, in the years approaching the Revolution, was that established by David Caldwell, in 1766, at a post near the present city of Greensboro. Caldwell was a native of Pennsylvania and a graduate of Princeton College. He came, a young man, to North Carolina, as a Presbyterian missionary and preacher, and began his educational work as an annex to his church. His school became the head and front of the secondary education in the State and he the foremost apostle of the schooling of the whole people. Numbers of his graduates were sent to Princeton and, later, to the new University of North Carolina, of which he declined the first presidency in his old age, dying in 1824. It was largely owing to him and the energetic group of like-minded men that North Carolina was the second State to put into its new constitution a clause under which a State university and a system of popular education could be built up. In a dark period of the war, in December, 1776, these noble words were written in the fundamental law of the Commonwealth: "A school or schools shall be established by the legislature for the convenient instruction of youth, with such salaries to the masters, paid by the public, as may enable them to instruct at low prices; and all useful learning shall be duly encouraged and promoted in one or more universities." So did this colony, beginning away down upon the sea sands, in the pine forests of the far-away eastern shore—for a century or more contemptuously ignored as a sort of "backyard" of its more aristocratic neighbors, Virginia and South Carolina—by the intelligence, push, and practical common sense of its "common people," so "forge ahead" that it placed itself in line as one of the first common-school States of the South seventy-five years before its great northern neighbor would consent to a hearty adoption of the educational ideas of Jefferson, Washington, Marshall, Cabell, and the group of other distinguished advocates of universal education within her own borders.

To this early and vigorous indorsement of the idea of popular education, under the direction of the Commonwealth, must we ascribe the prodigious influence of this great State, North Carolina, in the work of colonizing the Southwest. While Virginia reproduced herself in Kentucky, to-day the most pronounced representative of the old, high conservative type of Southern society, Tennessee, the lusty child of North Carolina, has become the most powerful and hopeful Commonwealth of the Southwest east of the Mississippi. Perhaps no Southern State has "given itself away" so generously in this drift of emigration as North Carolina. Indeed, for reasons not very clear until a period subsequent to the civil war, North Carolina appears to have spent itself so largely in peopling the new Southwest and the southern tier of counties in the original Northwestern States, that its progress in home affairs had been seriously impeded. The three Presidents of the United States that

hailed from Tennessee were born in North Carolina; possibly, Andrew Jackson over the border in South Carolina. But in the later educational revival, not only North Carolina but Tennessee, its greater child beyond the mountains, has grasped the common-school idea with a remarkable energy, and, in proportion to its wealth and opportunity, supported it more efficiently in some ways than any of its neighbors of the original Southwest. The "graded school" superintendents of these States, especially of east Tennessee and central North Carolina, are to-day among the ablest public school men in the South; fit descendants of the sturdy old Scotch and North Irish Presbyterian parsons and schoolmasters, who at once thrashed the "three R's" and the Latin grammar into the heads and preached the Westminster Catechism into the hearts of the rising generation, and fought through the great war of Independence. The story of the effort of the masses of the white people in North Carolina to come to some effective organization of the common school in the years before 1860, is one of the most interesting in American educational history.

It is a significant commentary on the scholastic ideal of popular education in England in the seventeenth century that John Locke, the most eminent philosophic thinker of his time, himself the author of a celebrated treatise on the training of an English gentleman, should have drawn up a constitution for the colony of South Carolina containing no reference to the fundamental duty of every civilized State, the educational preparation of the children and youth for good citizenship. Such was the case, and the visionary theory of the philosopher speedily went the way of all schemes of civic and sacred affairs that failed to recognize the common needs and deal with the actual conditions of common men.

In dealing with the early educational affairs of this colony, it is an advantage that a recent controversy has brought to the front as favorable a statement of the actual achievement of its early settlers in this respect as is possible in the present state of historical investigation. In fact, the records of the first thirty years of the colonial history of South Carolina are absolutely silent concerning any movement in this direction sufficiently important to attract public attention. The settlement of South Carolina occurred in 1670, and the earliest record of public interest of this sort mentions the founding of a school in Charleston in 1712 when, under the patronage of the State church, largely by the urgency of the "Society for the Propagation of the Gospel in Foreign Parts," a parochial school was founded under a permissive law, with some assistance from public money.

In the year 1883 the Hon. Edward McCrady, jr., of Charleston, S. C., in an elaborate and able address before the Historical Society of South Carolina, took up the statement of Professor McMaster, in his *History of the People of the United States*, that, during the colonial period, "in the Southern States education was almost wholly neglected, but nowhere to such an extent as in South Carolina. In that colony, prior to 1730, no such thing as a grammar school existed. Between 1731 and 1776 there were five. During the Revolution there were none."

In disproof of this declaration, which has been repeated in different historical publications, Mr. McCrady labors to show that the colony of South Carolina, before 1776, was in no sense indifferent to education; was indeed in several respects in advance of Massachusetts. In making the latter assertion, he declares that, prior to the Revolution, "there was little or no intercourse between New England and old England, while there was a close and constant intercourse between the people of South Carolina and the mother country." He quotes the remark of Hon. Hugh S. Legaré, of South Carolina, that "as most of the youth of opulent families of South Carolina were educated in English schools and universities, there can be no doubt their attainments in polite literature were very far superior to those of their contemporaries in the North, and the standard of scholarship in Charleston was consequently much higher than in any other city on the continent." He also indorses the statement of Dr. Samuel Miller, of the College of New Jersey, that "while a larger number of Northern youth were schooled in college, the Southern students

were more accurate, classical scholars, owing to their opportunities of study abroad." Mr. McCrady claims the establishment of a grammar school in Charlestown, Va., in 1621, previous to the Boston Latin School. He declares that "the schools of New England were not common schools, in the present sense of the term, although comprising a greater part of the children of the 'settlement.'" Probably confounding the Plymouth with the Massachusetts colony, he asserts that "it was twenty-three years after the commencement of 'the colony'" that the first effort to establish a public school, by law, was made. The statutes of 1642-1647 were "merely directory." "We must not be misled by the idea that the common school, as we know it, or anything like it, existed two hundred and forty years ago, even in Massachusetts." He also asserts that the colony of South Carolina demanded higher attainments of her schoolmasters than New England, even in colonial days.

These statements, on both sides, are but new illustrations of a careless habit of writing, by authors on the subject of education, concerning different sections of the country. As our account of the origin of the common-school system in colonial New York, especially in Massachusetts and Connecticut, disposes of these assertions of Mr. McCrady, it is not necessary to answer them in detail; or his further statement that, previous to the Revolution, there was no superiority of New England over his own State in respect to schools.

When we come to the positive portion of this address, we find much to explain the position of the author and certainly enough to show carelessness in Professor McMaster.

The key to Mr. McCrady's view of the situation is found in his statement: "It must be remembered that the difference between Massachusetts and South Carolina on the subject of education was, and always has been, that Massachusetts claimed to educate her youth generally, rich and poor, by the public or common school system, whereas South Carolina has made no such pretense, but, on the contrary, has always relied for the education of her sons more on private schools than on public schools." In short, this earnest South Carolinian, in characteristic style, is looking on the other side of the shield from the Northern historian he criticises. From his point of view, Mr. McCrady does certainly show that, among the "opulent classes," even at this early date, there was a creditable desire for the education of their boys. He shows that in no other Southern colony was there such a desire among a portion of the well-to-do families, not only to give their sons the best educational advantages abroad, but to send them to England for professional studies and general training in manners.

In other words, South Carolina was, in some respects, the most "English" of all the American colonies. To such an extent was this true that, until subsequent to the Revolution, spite of the great "opulence" of a large class of its leading families, there was no attempt to establish a college, although Virginia had supported William and Mary for home use for seventy-five years. It is shown that of the 114 young Americans admitted to the bar in London during the eighteenth century South Carolina had 44, while Virginia had but 17. It does not seem to occur to this writer that the chief reason why New England did not send its youth to English schools and colleges was the fact that Harvard and Yale were already so well known that numbers of English youth were sent to these colonies for education. Both the common and grammar schools of New England during this period were largely taught by the graduates of the several New England and English colleges.

But the elaborate and interesting statement of Mr. McCrady shows better than any counter statement the source of the educational facilities that certainly did exist in South Carolina before the Revolutionary period. There were, according to him, at the close of the war, "twenty-two schools in the twenty-four parishes and districts into which the State was then divided—11 public and 3 charitable grammar schools and 8 private schools of which we know." Of these, none comes under the head of what was then in New England regarded as a common school. They were all sem-

institutes established and controlled by the different churches, corporate academies, family, personal, private, or society schools. One of the best was the academy at Dorchester, established by the colony that came south from Dorchester, Mass., and tarried fifty years on the way to its final home in St. John's Parish (afterwards Liberty County), Ga. Besides these, there were doubtless other schools of a humbler sort, as in all the other southern colonies. As they were all tuition schools, most of them containing special provisions for the schooling of a few "poor children," and, as South Carolina at this period contained at least 60,000 white people and a school population of not less than 15,000, we must infer that the education of the masses of the people was in the fashion of the time.

The colony of South Carolina contained from the first a remarkable body of able and accomplished people. In the graces of polite living, æsthetic culture, and the appreciation and possession of the regulation style of British social upper-class life, they probably excelled the similar class in any other Southern colony. But in the more substantial quality of executive public capacity they were greatly surpassed by the corresponding class in Virginia; and this difference has been a marked characteristic of society in the two States to the present day. The Southwest at the present time is swarming with teachers in the secondary and higher schools who hail from Virginia; while the superior class in South Carolina has from the first inclined rather to the life of the gentleman according to the characteristic British type. That the "free schools" of South Carolina were not of the first quality is shown by the rush of the more favored youth abroad and Northward, while we must take with some allowance the assertion that the average South Carolina students, even from the English schools, were, in classical or any other line of scholarship, the superiors of the remarkable body of the Congregational clergy of New England, educated in their home colleges, Harvard, Brown, and Yale.

It is historically correct to give to the colony of South Carolina all the distinction that comes from a cultivated society—a class, in some respects the superior of any in the country, endowed with a remarkable quality of magnetic personality. But this is not what this essay is chiefly concerned with; although, of course, it is interesting to note the zeal of the better class of South Carolina in good culture, the growth of libraries, the indications of literary, artistic, and scientific interest, so well set forth in this able and interesting address of Mr. McCrady.

Of one fact the author of this circular of information can himself bear witness. This is that several of these South Carolina grammar schools, established before or near the period of the Revolution, are in existence to-day, sometimes in connection with the present system of common-school instruction, which in its present shape was inaugurated by the Hon. Hugh L. Thompson, first State superintendent of schools, after the full resumption of civic rights by the people of the State in 1876; also, there are in Charleston and several of the smaller cities interesting foundations of charity, orphan asylums, etc., that date from an early period. It has been our pleasure to visit the Mount Zion School, at Winnsboro; the Cheraw Lyceum, and the schools at Sumter and Camden, with several of the institutions referred to by Mr. McCrady in Charleston.

It was our special opportunity in 1886, at the invitation of the city authorities, in company with Hon. Mr. Coward, State superintendent of education, to visit the famous old school of the Winyaw Indigo Society of Georgetown, S. C., and there to meet a relative of Washington Alston, greatest of our early American painters, who was a native of this little city. As early as 1740 the planters of the Georgetown (S. C.) district, a vast region of marsh and upland between the Great and Little Pedee rivers, backed by 200 miles of forest, on the borders of North Carolina, established a monthly club, to talk over the last news and discuss the progress in the culture of the indigo plant, then experimented on in what afterwards became the largest rice plantations of the State. By 1753 the club found itself in funds to the extent that, on the call of the presiding officer at one meeting, it was decided that a rising vote

should be taken on the proposal to establish a "free school"; the affirmative to be indicated by draining and turning down upon the table the glass which each member held filled with generous wine. Every glass was emptied and turned upside down upon the table, and the Winshaw Indigo Society School sprang at once into a vigorous and useful existence.

For one hundred and forty years this local school had been a great blessing to that neighborhood, the sons of the gentlemen of the adjoining country being educated there, with a generous provision for orphans. Not a few of the famous men of the State are numbered in its reports. But in the course of time the great industry of the county, rice culture, was broken up; the region became densely populated by negroes, and the town lost a good deal of its ancient importance.

In 1886, on an educational tour through the State, we learned that the public funds for common schools in the county were chiefly monopolized by the colored people, and that the white children, many of them unable to attend a tuition academy, were in danger of educational destitution. The immediate object of our visit with the State superintendent of education was to persuade the members of the old club to give their schoolhouse, still a suitable building, and such funds as the organization retained to the city as a contribution to the founding of an efficient public "graded school," to supplement the colored side of the State system.

We found Georgetown a fairyland of greenery; a verdant island amid the great marshes at the mouth of two rivers that here pour their waters into the Atlantic, slumbering under the shade of its majestic live oaks, with the most attractive old colonial church we had yet seen; a striking reproduction of a fine parish church of the old England of a century ago; its cemetery and grounds inclosed in high walls and shadowed by overhanging trees. At the rink, the only modern building we saw, we talked out the evening hour, facing a most attentive audience; the leading white people in the center of the great hall, surrounded and brooded over by a mighty crowd of the colored folk gathered in a semicircle behind. Our host was of the Alston family and an excellent specimen of a rector of the Episcopal Church, compelled to do the work of a bishop of souls through a region as large as some of the United States. On the following day we appeared before the members of the Indigo Club, including a venerable gentleman who still rejoiced to have come from Boston fifty years before. The eloquent State superintendent surpassed himself in his plea for the dedication of the old seminary to the broader uses of a free public graded school. We left the same day, but soon after our plan was adopted and, at the last account, this community rejoiced in the possession of a suitable arrangement for the education of all classes and both races, free to all under the law for graded village and city schools in the State.

It will be a most attractive study to note the successive attempts of the people of South Carolina to establish a suitable system of public instruction for the masses of white children; to note the splendid service of some of the noblest of South Carolina's sons in behalf of the common school; the attempt of several different legislatures to put a system in operation, and the causes of failure, until the one inveterate and perpetual foe of the American common school, the institution of negro slavery, went to its own place in 1865.

As a companion picture to Mr. McCrady's glowing representation of the sufficiency of the colonial school arrangement for the 60,000 white people of South Carolina, we may call attention to the account given in *Horry & Weems's Life of Gen. Francis Marion* of a remarkable deliverance on education by a most characteristic representative of the "common people" of this State at the close of the Revolutionary war.

The educational record of the colony of Georgia previous to the Revolution is soon presented. In some respects the settlement of the province was fortunate. General Oglethorpe was an amiable enthusiast, inspired with a desire to found in a new land a refuge for a class of poor debtors for whom there was no hope in England. Around

this class, doubtless containing a fair amount of good material, he established a group of little communities—Hebrews, Catholics, Highland Scotchmen, New England yankees, Salzburgers, Moravians, etc.—each planted on his own territory, separated beyond the possibility of immediate hearty cooperation. This cosmopolitan assemblage he proposed to hold together by a form of government that no American colony was then willing to live under; which forbade the two luxuries of a new society organized in a semitropical country, negro slavery and strong drink. Of course the experiment went out in a general wrangle, and both the negro slave and plenty of good liquor came in. The colony in due time drifted into the regulation condition of all things provincial. At the breaking out of the Revolution Georgia seems to have been under the administration of a colonial governor so popular that, for a time, the movement for independence was arrested and only the people in St. John's Parish, of New England origin, sent a delegate to the first Colonial Congress.

Whatever there may have been of educational spirit in the little separate nationalities of which the new colony was composed during the brief period of its colonial existence, the most notable enterprise was the attempt to convert and school the Indians by a colony of Moravians, who soon abandoned the work and moved to Pennsylvania. Afterwards, George Whitfield, the great Methodist evangelist, who, with John Wesley, made Georgia the scene of some of his most devoted early labors, built up the celebrated Bethesda Orphan House.

The idea was suggested by Wesley in 1737, and taken up by Whitfield in 1740 with his usual enthusiasm and energy. He contributed £1,000 for its foundation, a 500-acre tract of ground was located 10 miles from Savannah, and a venture, quite beyond the immediate means of the zealous founders, was at once made with 24 orphans. From this time until the death of the great preacher in Massachusetts in 1770 Whitfield spared no pains to keep this enterprise before the benevolent people of England and all the American provinces. He even went to the length of buying a plantation in South Carolina and stocking it with negro slaves to increase the fund for the education and training of his white orphans. At the time of his death the whole number of pupils and workers on the estate amounted to 150 people, entirely dependent on his own efforts.

At one time Whitfield conceived the idea of elevating the establishment into a seminary of the same sort as the Log College of Pennsylvania, from whose original inception was finally evolved Princeton in New Jersey. At that time, 1764, he states that there was no college south of Virginia, and the new town of Savannah might be made an educational center for the adjacent country, Florida, and the West Indies. But all things of this sort depended on royal favor, and the powers in England failed to see the point and refused the charter. Foiled in this, Whitfield fell back on the organization of an academy at Bethesda, and he was at work in New England in behalf of this project at the time of his death.

The demise of the great evangelist was speedily followed by the failure of his school of benevolence and education, which had been kept alive by passing around his clerical hat on two continents. A series of fires and tornadoes twice leveled the building to the ground. Finally, in 1808, the legislature of Georgia settled up the affairs of the defunct institution and divided the proceeds among several charitable and educational institutions. A peculiar interest attaches to this movement from the fact that here was a project for a college in this distant and feeble colony before North or South Carolina had started in this direction. A portion of this fund was given to the Chatham Academy, which later became a celebrated school and remains to-day as the upper grade of the free public school system of the beautiful and thriving city of Savannah.

But out of this cosmopolitan population of the colony was evolved an energetic and executive force, which, in time, has given to the people of Georgia the habit, by common consent, of declaring their Commonwealth "the Empire State of the

South." While very different from other Southern States, it can not be questioned that out of this original mixture of intelligent and ambitious people, from the first attracted thither, the State of Georgia has grown in industrial and general executive ability in a remarkable degree.

Here we leave the six Southern colonies, at the breaking out of the Revolutionary war, nearly equal in population to the remaining seven Central and New England provinces. We have noted the differences in their conditions of life, the organization of society, and the form of colonial government in all, which made it next to impossible that more should have been achieved in the direction of popular education than we have found. But we have shown that, among the superior class of them all, there was no special lack of educational zeal in their own behalf, and that their opportunities of home, foreign, and Northern training had been so well improved that, on the appearance of the general emergency, a group of leaders in civic and one supreme commander in military affairs appeared, whose names have become household words in the annals of the Republic.

POPULAR EDUCATION IN THE CENTRAL AMERICAN COLONIES BEFORE THE REVOLUTION.

NEW YORK.

The vast unknown realm between the icy coast of Labrador and Cape Henlopen, on the southern shore of Delaware Bay, had been given by the Pope of Rome to Spain, and the French had explored and partially occupied the Canadas, when Henry Hudson, an Englishman in the service of Holland, first sailed up the "great river of the mountains" to the present site of Albany, N. Y., in 1609. The habit of "claiming the earth," now the prerogative of every American citizen, three centuries ago was monopolized by the emperors, kings, popes, and "high mightinesses" of Europe. On the strength of this voyage, the States General of Holland, in 1614, gave permission to trade, and in 1621 granted a general dispensation to the Dutch West India Company, an association of merchants, to occupy and govern an imperial domain. This New Netherlands, in the fertile imagination of this "syndicate," included the whole region between the Connecticut River and the Far West, from the St. Lawrence River southward, claiming New Jersey and Delaware, besides all of New England below Cape Cod.

But the French had their own views about the Lake Champlain country. The obstinate Yankee struck Plymouth Rock, pushed himself "out West" as far as Springfield, Mass., claimed Connecticut and Vermont, and finally drove the afflicted Dutchman within the present eastern boundary of New York. An eminent descendant of the original occupants in 1861 informed us that "now the Union was about to break up, New York would resume its claim on the whole country west of the Connecticut River." We advised him to study a township map of New England, reminding him that each of these little empires had fought over its boundary for two hundred years, till their outlines were "as ragged as a hetchel," and by the time that New York had finished with the first "tier" on the west slope of the mountains there would probably be a call for a "compromise."

Gradually, by successive reductions, at the beginning of the century the State of New York settled down content with the 47,620 square miles of its present area; an extent of 311 miles from north to south, and, including Long Island, 412 miles from east to west. And surely the Commonwealth beyond the Berkshires may well be satisfied with a State more than two-thirds the size of all New England and incomparably more productive; in all but the absence of coal one of the most favored; unsurpassed in varied and picturesque natural scenery; the military strategic point of the Northern States between the Atlantic and the Mississippi, according to the testimony of Washington, Scott, and Grant. Only through the open gate of the Lake Erie shore can the East reach the great West without scaling the uplands of

the Alleghany range, as far south as the lowlands of the Gulf States. The harbor of New York is the natural home of the commerce of the Atlantic. From the first all things pointed to New York as the Empire State of the New World.

To-day this magnificent Commonwealth has 6,000,000 people—twice the number of the new Republic when Washington was inaugurated in Wall street as first President of the United States. Its property valuation is \$3,000,000,000. One-third the entire population of the State is grouped in what is already known as "the greater metropolis," not only foremost as the financial but also as the national center of art, music, the drama, journalism, and the periodical authorship, out of which our characteristic American literature is beginning to emerge. Here are concentrating the most vital interests of the Republic. Both the political parties look to New York as the decisive battle ground in the hard-fought conflict for the Presidency. And the burning issue of the final triumph of the American common school over its enemies will be achieved where the old Dutchmen sat on Manhattan Island two hundred and seventy years ago, "with their gable ends to the street," imbibing good liquor, in the jolly days when one-fourth the houses in New Amsterdam were temples dedicated to St. Gambrinus.

Mr. Emerson used to say that "in America, Old England extends to the Alleghanies and New England begins out West." But in fact the America of the future, as respects the quality and mingling of its people, began in New York. It is true that for forty years a colony of Dutch traders and great landowners held the spacious realm of the Hudson and eastern Mohawk valleys under the rule of what we now call a big syndicate, the Dutch West India Company, in a very indefinite way backed by the States General of Holland. Little Holland, during the forty years of the Dutch occupation of New York, was the foremost of European nations in respect to wealth, skilled industry, popular culture, art, eminent scholarship, and the outward forms of free government. But the history of that great people at home is only another illustration that no European continental State contains, in its radical social organization, the elements of a permanent constitutional republic. In 1709 Dean Swift, one of the shrewdest men in Europe, said of the Dutch: "They are a commonwealth founded on a sudden, by a desperate attempt, in a desperate condition, not formed or digested into a regular system by mature thought or reason, but huddled up under the pressure of sudden exigencies; calculated for no long duration, and hitherto subsisting by accident in the midst of contending powers who can not yet agree about sharing it among them." Society in Holland was feudal in the country; the free cities ruled virtually by a powerful aristocracy; the people torn in pieces by the bitter contentions of sect and party. Holland to-day is, consequently, the most prosperous, intelligent, and contented of the smaller kingdoms of Europe.

Unfortunately, unlike New England, which represented the most progressive element of England, New Amsterdam represented the least advanced element of Holland. It was a distant colony, absorbed in trade, controlled by a trading company which appointed its governors. The offer of 8 miles of land on each side, or 16 miles on one side of the Hudson, with an indefinite extension beyond, with feudal powers to the owner, developed the patroon, the nearest approach to the European feudal lord of the manor that ever lifted his head this side of the water. After two hundred years of vain attempt to grapple with its difficulties, this absurd arrangement exploded in "the patroon war" of fifty years ago, the only agricultural rebellion ever known in the North. With a fair per cent of respectable personal ability and character, an intermittent policy of religious toleration, with a state church and a few parochial schools, the history of New Netherlands for forty years is a dreary record of petty quarrels between the company and the landowners, savage Indian outbreaks, with all the adjuncts of an intensely aristocratic society. Not until twenty years after the settlement was the little gain of a sort of advisory council to represent the people accorded by the tyrannical governors. At last the masses were so worn out with this exasperating conflict that they "struck" on the appearance of

a British fleet in 1664, refused to defend the city, and compelled testy old Governor Stuyvesant to haul down the Dutch flag for "unconditional surrender."

Had the States General accepted the offer of Parson Robinson to send 400 families of Puritans to Manhattan things might have gone faster. Even then the colony was known for the mixture of population that made up the 8,000 people encamped on this imperial domain. The influence of the better side of Holland really never appeared until after the English occupation. Then, goaded into activity by the rivalry of the Englishman, Scotchman, Protestant Irishman, Huguenot, Yankee, and various other peoples, the superior class of the Holland settlers developed into a valuable social, industrial, and political element, largely conservative, with a few eminent exceptions, having little part or lot in the making of the New York.

Already was the keynote of the cosmopolitan civilization which dominated the great central region of the old colonies between Virginia and New England struck with the change of its name from Dutch New Amsterdam to English New York. For the next one hundred years of British occupation the old eastern New York slowly plodded on, almost in the rear of the colonial procession. The great landowners held to their vast estates with a death grip, although the class of smaller farmers was gradually developed. North of Albany and west of Schenectady extended the vast, sparsely peopled wilderness fought over in the almost perpetual French and Indian wars. But the population all the time was becoming more cosmopolitan; and, spite of the tyrannical policy of the home government, all the time irritating the people, the rule of a great nation like England was a prodigious advance upon the petty worryment by a testy and narrow syndicate of traders. Next to Virginia, colonial New York was the most aristocratic of the thirteen colonies. Yet the assembly struck out at an early day with courage, and a majority of the best people, with an eminent leadership, were thoroughly patriotic, and the new State had the distinguished honor of witnessing the inauguration of Washington as first President of the United States in its metropolis.

At the close of the war New York was the fifth State in the Union, in 1780 the city and Long Island containing 50,000 and the State 233,000—in the rear of Virginia, Massachusetts, North Carolina, and Maryland. Mr. Seward tells a story that at this time it was thought New York City might become an educational center, but could hardly aspire to the commercial importance of Boston, Philadelphia, and Charleston. It is said that the ten leading patriot statesmen of the colony represented ten nationalities. More than that number of languages were spoken on Manhattan Island. Even the little frontier village of Utica, with its ninety houses, had nine languages on hand.

The colonial history of New York in respect to education must be regarded from the standpoint of this peculiar organization of society and strangely cosmopolitan mingling of all sorts and conditions of men. The historian of education in New York, Mr. Randall, remarks: "Prior to the close of the Revolutionary war and the organization of the State government very little general attention seems to have been bestowed upon the subject of popular education."

There is no reliable foundation for the assumption that the type of limited education found in the New Netherlands during the forty years prior to the English occupation was anything more than the regulation parochial school of the Dutch Reformed Church, assisted or modified to a certain extent by such methods as were at hand. The careful author of Colonial New York says: "In New Netherlands education was neglected. The first colonists, except the officers of the affairs of the company, were laborers, artisans, servants, with a few clerks and tradesmen who had been educated at the common schools, but never been within the walls of a college. Their time belonged to others, to whom was left the duty of establishing schools and churches. After a while, when the monopolizing grasp of the company was loosed and freemen began to immigrate, they were not of the highly educated class, but burghers, merchants, and traders, who came to better their fortunes. Of educated men, therefore, few

but clergymen, lawyers, and doctors came to New Netherlands. Schools were not neglected, for where do you find an educated minister of the gospel that you do not find a school? But the few 'ministers of the Word,' stationed in small settlements, wide apart, among people mostly struggling for the necessities of life, could not found colleges. They could see that the children of their parishioners were taught the rudiments of learning, and could themselves teach the classics when required. They could do nothing more."

However general or effective the home or church instruction of children and youth might have been, there was nothing corresponding to the present common-school system of New York during this period. The Dutch people of the New York province whose children were actually in the schools had nothing of importance to do with their management. The church, the Government, the entire constitution of their life, were under the virtual control of powers against which they could at best protest, and which practically held on to the last. As late as 1649 "The Nine," who represented the popular element in the Government, sent a petition to the States General, accompanied by an elaborate remonstrance, against the management of the West India Company in the province, in which they demanded the abdication of the company and the assumption of power by the home government. Their second demand was for "a public school, with at least two good masters." It was asserted that, owing to "excessive and most flagrant neglect" by the company, the condition of New Netherlands was far inferior to that of New England. Three clergymen were demanded for the province, and the youth were to be instructed by good schoolmasters. It was 1652 before burgher government was conceded by the States General to New Amsterdam, with a reservation of the rights of the West India Company. But bluff old Governor Peter Stuyvesant stoutly antagonized all these reforms, and at the last was practically deposed by his enraged subjects, who refused to defend the town against the fleet of the Duke of York and hailed the advent of their new English masters as a benediction.

There is no good evidence that during the century following, under the administration of the British authorities, things were essentially different. "Before 1754," says Smith's History of New York, published in London in 1757, "our schools were in the lowest order; the instructors want instruction, and through a long and shameful neglect of all the arts and sciences our common speech is extremely corrupt and the evidence of a bad taste, both as to thought and language, and visible in all our proceedings, public and private." These words, of course, apply to the masses of the people for whom any system of common schools would be supported in the colony. The superior class, of whatever nationality, would seek education abroad or in such ways as the upper strata of any society always engages to furnish itself with the chief agency and note of its superiority. In 1710 we hear of the first school west of Albany; in 1750, of one in Schoharie; in 1710, of a Latin school in New York. In 1755 a Dutch chorister and schoolmaster were imported from Holland, who held on until 1773, teaching English and Dutch in the same school. No beginnings of the American common school are here, outside of the growing desire of an improving people, harassed by Indian and French wars on their borders, exasperated by tyrannical governors, and absorbed by the conflicts in which the assembly of the colony was involved with the Government.

In 1754 King's College was established in the little city of New York by voluntary contributions of the inhabitants of the province, assisted by the general assembly and the dominant ecclesiastical corporation, Trinity Church. A Royal charter and a grant of money were obtained and the institution was incorporated under a number of trustees, "governors of the college of the province of New York, in the city of New York, America," with full power of administration. The president of the college was to be a member of the Church of England, and a form of prayer with a special petition for the college was enjoined. In 1787 twenty-four gentlemen were made a close corporation, "trustees of Columbia College," with absolute power.

It should be remembered that in estimating the condition of education in New York before the Revolution we are not speaking of the Empire State or the metropolitan city of to-day, nor, indeed, of the commonwealth and metropolis that immediately sprang into a vigorous life under the inspiration of the new Republic. As late as 1791 New York was only the fifth State in population of the thirteen. Virginia had double and Pennsylvania a fifth more people than it. North Carolina and Massachusetts were more populous; Maryland was equal; Connecticut and the new Western State of Tennessee were nearly alongside. And during the seven years preceding this date the State, then with only 341,000 people, had grown really one-half. Its scattered population was hedged in by a vast wilderness north of the southern shore of Lake Champlain and the entire country west of the eastern settlements on the Mohawk River and the Catskill Mountains.

But even then was laid the foundation of the present superiority of this great Commonwealth in its mixture of various peoples. At the close of the Revolution it was found that the discipline and conflicts for the past two hundred years had welded together a people that hereafter would develop on a broader line of civic, religious, and social policy than was possible in any one of the eastern or southern shore States.

But the same cause was all the time a great hindrance to the establishment of any effective system of common schools, inaugurated, organized, supported, and supervised by the whole people, through the instrumentality of State, municipal, and local government. As late as 1806 there were none save parochial and private schools in the city of New York, and the "public-school society" was then formed to care for the education of a large number of children already outside the educational charge of the various religious sects. In Winterbottom's View of the United States of America, published in London in 1795, we learn that with the exception of Columbia College there were eight important academies in different parts of the State, and that the legislature had already appropriated gratuities for colleges and academies and \$150,000 to establish an elementary school within the limits of every 4 miles square in the State.

NEW JERSEY.

As far as concerns the origin of the American common school, the colony of New Jersey, previous to the Revolution, has little to be recorded. The pioneer colonization of the province by the Dutch and Swedes; the contention over its early government; the frequent transformations through which it passed in 70 years, from the attempt to establish the feudal domain of New Albion to the final surrender of the province to the Crown; and, beyond all, the almost hopeless variety of its populations, including the most extreme representatives of "every sort and condition," from the Old Testament type of Connecticut Yankee to the Quaker, the Scotch Presbyterian, the easy-going New York Dutchman, and the motley crowd that drifted into the villages that afterwards became the important cities of the State; all these conditions were unfavorable to the cooperation of the people in any system for general education.

About the year 1688 it is recorded that "the want of clergymen and schoolmasters began to be seriously felt, the population of the province being in the neighborhood of 10,000. Although schools and schoolmasters were twice made the subjects of legislation under the proprietary government before 1700, it is impossible to discover from the imperfect records to what extent education was fostered.

"In 1693 the inhabitants of every town, by warrant from a justice of the peace, might meet and choose three men to make a rate and establish the salary of a schoolmaster for as long a time as they might think proper; a majority of the inhabitants to compel the payment of any rates levied and uncollected; the act setting forth that 'the cultivation of learning and good manners tells greatly to the good and benefit of mankind.' This act was supplemented by another in 1695 directing the choice of three men in each town to be authorized to select a teacher and the most convenient place or places where schools should be kept."

There was doubtless the usual effort of the clergy of the many sects in the colony to attend to their accustomed work of instruction, but the records are full of the lack of clerical power to educate the people. Although the new State in 1790 had a population of 185,000, the constitution of 1776 contained no allusion to schools or education. The first general law constituting a fund for the support of free schools was passed in 1816 and the first distribution of its income was deferred to 1829, when an act was passed "to establish common schools." Still, it was not until ten years later that the towns were compelled to raise a special sum for education every year, and not until 1871 that the schools of the State were made entirely free by a State tax.

But while New Jersey has been slow in the full development of the American common school, there is still reserved for her a distinction not inferior to any Commonwealth in the early inauguration of one of the most influential centers of the higher education in the Union and, through its graduates, the exertion of an influence on the general educational development of the Atlantic Southern States second to no other. In the earlier years of the eighteenth century, through the zeal of the Scotch Presbyterians, then becoming numerous in New Jersey and Pennsylvania, was founded the first "log college" by Dr. Tennant, on the Neshaminy Creek, Bucks County, Pa., which was the pioneer of the College of New Jersey, now known as Princeton University.

The College of New Jersey was established in 1738 by the labors of Jonathan Dickinson; first chartered in 1746 and again in 1748, and in 1752 located at Princeton. Although never since the Revolution in any vital sense connected with the State government, and although, with the exception of a few insignificant gifts, it has never received a dollar of its bounty, it has been as certainly identified with that Commonwealth as Harvard with Massachusetts or Yale with Connecticut, and is the fourth of the illustrious series—Harvard, William and Mary, Yale, and New Jersey. Of its great services to the cause of American education from its earliest foundation it is unnecessary to speak. It is introduced here to give point to the interesting fact of the great impetus given by it, in its earliest days, to the cause of popular and secondary schooling in the Southern States.

The history of education in Virginia and the two Carolinas bears decisive testimony to the great uplift to these colonies from the advent of the Presbyterian population in the Piedmont region at various periods before the Revolution. In Virginia it appeared through their settlements in the northeast and the Valley of the Shenandoah; in North Carolina in the prolongation of this immigration through the beautiful upland county that separates the lowland region of the coast from the sublimity of its western wilderness; in South Carolina, in the northwest corner, whence many of the most eminent men have come, and which is still one of the most progressive portions of the State. Into these sections this population, chiefly of Scotch and North Irish origin, poured in a steady flood. Their descendants at a later date pushed on to people the new Western States of Kentucky and Tennessee. No better population could have been found for the building of an intelligent, steadfast, and progressive colony. Scotland had already, for half a century, enjoyed a system of public education not inferior to any in Europe, and was destined to send forth a steady procession of emigrants that have made their mark in every civilized land, and everywhere led the assault on despotic power.

But the most notable fact of all was the great Scotch Presbyterian crusade against ignorance. With the founding of every Presbyterian church in the colonies and States there was set up something that took the place of a school. Its clergy from the first, like the ministers of the New England Congregationalists, were a body of educated men. As soon as the first local "log college" was established students began to throng it from the Southern as well as the Northern provinces. With the establishment of the College of New Jersey in the first half of the eighteenth century a larger number were attracted to its opportunities. We have already mentioned the great obligations of the clergy of North Carolina to its graduates, not only from that province, but to eminent men like Caldwell, who emigrated from Pennsylvania.

Later the educational movement in Kentucky and Tennessee, especially at Nashville, was inaugurated by Dr. Lindsay, whose work still remains in connection with the Peabody Normal School in that city.

The schools established by this body of graduates were of the parochial church order, and the secondary and higher education was all in direct or indirect connection with the Presbyterian Church. But underneath the Presbyterian ecclesiastical polity as it originated in Europe, just as in the Congregational polity developed in New England, was the fundamental assertion of the right of the people to control the entire organization. The Presbyterian polity is no fixed establishment, but a representative organization, at any time capable of reconstruction or of great alteration by the Christian people who constitute the church. At first, the Presbyterians, like all dissenting bodies, had scant welcome in the Southern colonies, all of which were, directly or indirectly, under the Church of England. Hence the inevitable prejudice of this people against every school in the most remote way implicated with the Church of England, which had been the deadly foe of the kirk at home. In New Jersey and Pennsylvania, owing to the more liberal ecclesiastical atmosphere, this obstacle to popular education was not so formidable, although even here, a serious impediment, delaying the establishment of the complete American system for many years. But the result was that a general habit of educating all children at that time supposed to be capable of education was formed in those portions of the colonies which were thus settled, and where still are found the best fruits of the great revival of popular instruction during the past twenty-five years.

In its own way, the College of New Jersey at Princeton has been a great nursery of eminent men in all departments of the colonial and national life. In its triennial catalogue we find the names of 1 President and 3 Vice-Presidents of the United States; 3 signers of the Declaration of Independence; 26 members of the Continental Congress; 8 members of the convention that formed the Constitution of the United States; 22 governors of States; 112 judges of the Supreme Court of the United States or different States of the union; 50 Senators of the United States; 160 Members of the National House of Representatives; 400 names of men occupying the highest places in the gift of the people, powerful and influential because of their education within its walls. In this college twenty years ago there had been graduated 900 ministers of the gospel; 220 presidents, professors and teachers in colleges; 450 doctors and professors of medicine. So has New Jersey vindicated her good faith in the American idea of educating the children and youth of the Republic for that mental and moral manhood which is the central idea of good American citizenship.

PENNSYLVANIA.

The first permanent settlement in Pennsylvania was by the Swedes in 1638. In 1655 this community passed under the control of the Dutch, only to fall in 1664 under the government of England, which had already superseded the brief control of the States General over the entire region from the Connecticut River in New England to the Delaware in Pennsylvania. In 1681 William Penn obtained from Charles II a charter for the territory west of the Delaware River, including 3° of latitude by 5° of longitude, and later for the whole of York, an additional part of which is now the State of Delaware. In 1682 he came to his vast domain and endeavored to establish an ideal government, combining a feudal arrangement of public affairs, the principle of Quaker nonresistance, and a theory of popular education whose logical application would certainly have destroyed the structure of the society of which his schools were a vital part.

From this period to the breaking out of the Revolutionary war the colony of Pennsylvania in many ways was unfavorable soil for the growth of any persistent or practicable scheme of common education. The great fertility of the country, the general spirit of religious toleration by the Penn government, and the early peaceful

relations with the Indian tribes that were first encountered by the settlers on the eastern border account for the rapid growth of population. The little group of possibly 2,000 people in 1682, of several nationalities, had increased and multiplied to 434,000 in 1787. During this entire period the colony was in a state of perpetual conflict. The original government of Penn, an impracticable and illogical ideal of feudal democracy, gave way to the rule of the proprietors and the Crown with endless complications. Half a dozen different nationalities flocked thither—Swedes, English, Scotch, Welsh, and Irish, with one-third the population in 1790 of German extraction. All were in a state of devoted allegiance to their respective ecclesiastical polities, and none of these, save possibly the Methodist, had any place for a system of unsectarian public schools for "all orders and conditions" of people. The colonists on the western slopes of the Alleghanies were exasperated by their exposed condition and in constant peril from the fighting Indians. Parkman, in his history of the conspiracy of Pontiac, declares that the peaceful plan of William Penn in dealing with the Indians was effective because on the eastern border he only encountered the remnants of conquered tribes that had been subdued by the Six Nations in the north and compelled to bear the humiliating title "Old Women," and that as soon as the immigrants approached the mountain realm of western Pennsylvania the real fighting Indians appeared—the same that have confronted the people of every State from the beginning to the present day. However this may have been, the neglect of the legislature to provide for the defense of the exposed settlers on the western border continued for fifty years, and the colony itself was saved from impending anarchy by the wisdom and tact of Benjamin Franklin, who stands up as the great benefactor of the new Commonwealth through long years to come.

William Penn himself entertained broad and rational ideas of education, as his published writings and plans for the development of schools in his new domain bear witness. But like many a political theorist and social reformer who has drawn up the plan of an ideal community, he found himself confronted by conditions that placed a speedy veto on the logical application of his own scheme to actual affairs. His "Frame of Government," prepared in 1682 at home, provides that "the governor and council shall erect and order all public schools and encourage and reward the authors of useful sciences and laudable inventions in the said province"; that a "committee of manners, education, and arts" shall take cognizance of the life of the young, that they may grow up in "virtue and useful knowledge and arts"; also that "all children in the province of the age of 12 years shall be taught some useful trade and skill." On leaving England he charged his wife "to spare no cost in the education of his own children." He saw clearly that the stability of government depends on the intelligence, industry, and virtue of the young, and in his "Precepts and Maxims," are found ideas far in advance of his age for the management of schools and the advancement in learning. But the fact that all these enlightened opinions, including his theory of religious liberty and nonresistance, were found under the same broad-brimmed hat that covered the head of a great English feudal lord and friend of King Charles II is proof that practical statesmanship was not the forte of the great Quaker whose name and fame are still cherished as the most precious heirloom of the great Commonwealth that bears his name.

It was at once apparent that these broad ideas of education could not be applied in the new colony. Although the "Frame of Government" enacted by the general assembly assumed that all people could read the published laws, and declared that one-third the provincial council, with the governor, should take under its charge the educational affairs of the State, and although in 1683 a statute similar to the New England law of 1642, respecting the duty of parents and guardians to instruct their children, was passed, yet this law was rejected by the home Government. It was reenacted in 1693 only henceforth to be relegated to "innocuous desuetude" for all coming time.

The chief result from this law was the establishment of a few parochial schools of the Quaker persuasion in Philadelphia. The first schoolmaster was brought from England to establish an elementary school in 1683. The city council of Philadelphia, by the advice of Penn, was encouraged to set up a "public grammar school," supposed to be the origin of the "Friends' Public School," now known as "The William Penn Charter School." It was, like the first Dutch school in New Amsterdam, a parochial school, under the charge of a close corporation, encouraged and assisted somewhat by the public authorities. It was of the higher secondary grade, including in its plan a group of a dozen or more charity schools, which are existing at the present day. But it is not certain that the ideas of Penn extended beyond a scheme of church education, subsidized by a government in the hands of his own religious denomination. If it were broader than this, it was soon found impracticable to do more than, in this preliminary way, to encourage the founding of this type of schools. The eminent historian of education in Pennsylvania, Dr. Wickersham, says:

"The advanced educational opinions of the founder of Pennsylvania and his immediate followers do not seem to have been established or acted upon by those who succeeded them in the management of the affairs of the province, for little affecting the interests of education can be found on record emanating from either the proprietors, the governors, the provincial council, or the general assembly from Penn's time on to the breaking out of the Revolutionary war. The first quarter of the eighteenth century was almost a perfect blank, so far as anything was done by the public authorities to provide an education for the people. Indeed, the last charter of privileges, granted by Penn himself in 1701, which continued in force until the adoption of the Constitution of 1776, contained no section or clause relating to education. The provisions in the earlier charters in regard to the establishment of public schools were omitted, and the laws based thereupon seemed consequently to have died out."

"With a few legislative resolutions, none of which were in the direction of the common-school idea, the historian of the colony may be dismissed from the consideration of education for well-nigh a hundred years."

In fact, the same conditions of population which in New York contained the original elements of the splendid cosmopolitanism that is now characteristic of American civilization were even more marked in Pennsylvania. Therein was hidden the prophecy of a great future, but only after a long and bitter conflict could the elements be adjusted in a Commonwealth competent to do any good thing by the common consent of the governed. It will be only after many years that the advance guard of the grand army of the American people, compacted of all the stronger elements of all the civilized nations, will appear on the field like the head of a column emerging from a wilderness.

But, meanwhile, the educational observer who jumps to the conclusion that because of this neglect of educational affairs by the public authorities, the colony of Pennsylvania must be remanded to the barbarism of illiteracy, and that it came up to the union of the old thirteen colonies in a state of gross private and public ignorance, will make a capital mistake. No colony in America included in its ante-Revolutionary immigration a greater amount of industrial energy and personal worth, or contained better materials for the schooling that was biding its time. Abandoned by their distracted government, these various peoples fell back, each on its own reserved energy and intelligence, and after a fashion of its own did provide for the training of its own children and youth.

The Quakers went their own way with intelligent persistence. As a body, they were a superior folk, although some of their leaders were doubtless hostile to education of the popular type and under the control of the people. The chronicles of Pennsylvania bear testimony to the persistent efforts of these good people in this direction. Not only did they provide in their churches for the instruction of their

own children, but their charity schools for the poorer white, and even for the negro youth, were conspicuous among the churches of the country. In proportion to their numbers, it is doubtful if any religious body in the United States has done more charitable educational work than the Friends. These early schools grew, in time, into several excellent seminaries and colleges that, to-day, maintain a high rank among the institutions of this and other States. It was largely to the early training of their youth that these people owe their remarkable industrial and financial prosperity and the civic and social respectability which has made Philadelphia one of the most notable metropolitan cities in the world, and one of the most acceptable for the residence of workingmen.

The advent of the Germans in the colony of Pennsylvania was the beginning of a great influx of this people, which has exerted a powerful influence in the Republic. As early as 1741 the Moravian brethren in London formed a society for the education and conversion of the Indians in America. The Lutheran churches in Germany were also pushing in the same direction. In 1746 Pastor Schlotter, of Switzerland, of the German Reformed church, appeared in the colonies, and after laboring a few years returned to Europe to make known the needs of his people. The London Society for the Propagation of the Gospel in Foreign Parts was stirred up by the representation of the forlorn state of the people in respect to ignorance and destitution of religious opportunities. A fund of \$100,000 was raised and a board of managers was appointed to act in some useful connection with the proprietary government of Pennsylvania for the promotion of the good cause. In this board of directors in 1754 appears the name of Benjamin Franklin, the great industrial and educational schoolmaster, not only of Pennsylvania, but of the Northern colonies, a schoolmaster "of all work," without whom the people would never have been brought to the point of following the lead of Washington and Jefferson from the year of rebellion in 1776 to the formation of the new Republic in 1788. Schools were established in many localities; a printing press was set up; a newspaper, tracts, school-books, and other documents were published, and the education of girls was included in the plan of the managers. But this movement, like the original plan of William Penn, ran against the obstinate hostility of the mass of the people for whom it was devised. The clergy were alarmed; the people were opposed to learning the English language; local magnates saw in the movement a device for the suppression of their own petty authority. The opposition was encouraged by the reluctance to enter into any general system of schools by the influential families. So, with all these efforts, there seems to have been at no time more than 1,000 pupils under instruction. In 1760 there were only 440 under instruction, and in 1763 the experiment died a natural death.

The Episcopalians, Catholics, and Presbyterians in the colony, in the same way, struck out, each according to its own distinctive plan of parochial schools. But no scheme of church parochial instruction has succeeded in our country except under very peculiar conditions and for a brief period in educating the people. It was only successful in Scotland as long as the influential mass of the Scotch people were of one mind in ecclesiastical affairs. The immigrating people from the Scotch and north of Ireland Presbyterian stock became a great power in building up a superior education in Pennsylvania. Indeed, Pennsylvania and New Jersey became the headquarters of these people, and from their habit of coupling an elementary school with every church and the preference of their people for an educated ministry came, as we have already shown, the most important results, not only in the Central, but in the Southern and, later, the new Western States of the Union. The great native wealth of the mineral lands of Pennsylvania, with the western slope beyond the Alleghanies, fell largely into the hands of this prudent and progressive people, and, years before the State could agree on any general system of education for the whole, this body of immigrants were at work, earnestly "training up their children in the way they should go." We have already called attention to the good results of the remarkable

colony from Connecticut in the valley of Wyoming. New England, in the language of Washington, was always "spreading itself," and wherever it secured a foothold testified to its unshaken faith in universal education.

Below and outside of all this work of the different churches was the informal action of the people themselves. In the border land, which included much of Pennsylvania till long after the Revolution, this was the most potent influence in awakening the desire for an established system of common schools. Through the wide spaces of this extended territory were scattered little groups of children, gathered in neighborhood schools, organized and cared for by the parents, often taught by traveling teachers. Of course there was a great deal of crude and almost useless work going on in these little centers of primary schooling. But among the best uses of any common-school system is the education of the families of the children and youth through their care for it. And here was generated, in this work of caring for the details of school life among a great multitude of the "common people" of this new State, the spirit that stood behind Thaddeus Stevens and his coadjutor half a century later in the desperate conflict for the rights of the children.

This great diversity of religious organization and the ecclesiastical polity of all the denominations, which for almost two centuries postponed the establishment of a complete system of common schools in Pennsylvania, had its compensation somewhat in the vigorous efforts of the clerical leaders of each of these great bodies of the people to build up the secondary and higher education. It would be interesting, were it the object of this essay, to follow out the lines of this energetic policy which, a century ago, made Pennsylvania the center of so much that is valuable in this department of education. The special interest that attaches to the labors of two of these denominations—the Moravians, from Germany and Switzerland, and the Presbyterians, from Scotland and the north of Ireland—may now briefly be noted.

From the Moravians came the establishment of a central school as early as 1739, from which has grown up a system of educational institutions of all kinds, whose central point is the village of Bethlehem, Pa. The Moravian Brothers, organized as followers of John Huss, at their beginning developed that special zeal and capacity for education which has made their name distinguished in proportion to their numbers. One of their eminent bishops was the famous John Amos Comenius, the fountain head among the moderns of that method of pedagogic science which, as further illustrated in the teachings of Pestalozzi, Froebel, and a growing multitude of educational reformers, has found in our country its most enthusiastic popular reception and has now become the ideal of every superior common school. It is a forcible illustration of the characteristic habit of always reaching out through the world for the highest aids in education that, in the latter half of the seventeenth century, Comenius was invited to the presidency of Harvard College, Massachusetts; in the quaint language of Dr. Cotton Mather, "To come over into New England and illuminate this college and country in the quality of president." That he did not accept this invitation seems almost a national calamity, since it condemned our own land to a wearisome pilgrimage of one hundred and fifty years, out of the lowlands of the mechanical and empirical school keeping, up to the inspiration of half a century ago through the introduction of the methods of the new education by Horace Mann and the splendid body of his associates, even more powerfully renewed in the generation since the close of our civil war.

The Moravians first appeared in Georgia in 1735 as missionaries to the Indians, but, soon discouraged by the small results of the venture, were attracted by the religious toleration of Pennsylvania to that colony, where they arrived, under the leadership of Peter Beker, at Germantown, in 1739. On his passage he found the great Methodist preacher, George Whitfield, who proposed the establishment of a school for negro youth. A tract of 5,000 acres was purchased and located in Northampton, held on condition of paying a red rose in June in each year forever. That red rose was a fit emblem of the perpetual blessing that has blossomed out from this original plant of

the tree of knowledge in the wilderness of Pennsylvania. Out of it came, in due season, schools at which were introduced many of the improved methods of the great bishop teacher, Comenius—in many portions of the State elementary schools for children, coeducational seminaries, and schools for negroes and Indians. Many of the European peculiarities of this Moravian community have been dropped, but their great institutions of learning at Bethlehem, Nazareth, and Lititz, Pa., with the famous seminary for girls at Salem, N. C., still attest the persistence and wisdom of their educational policy. These schools at different times have attracted large numbers of students from all sections and every part of the Union. Indirectly they have contributed to the full adoption of the common school, for nowhere is the great work of Comenius at present more honored than in the New World, hardly recognized as existing in his “*orbis pictus*.”

Even more powerful and extended was the influence of the Presbyterian people, who began coming to Pennsylvania soon after its settlement from Scotland and the north of Ireland, and to-day constitute one of the most important elements of its composite population. At once these little presbyteries in imitation of the home custom, established parochial schools, but soon the desire for an educated ministry, also inherited from the home example, stirred the waters for an education of a higher grade. The “Log College,” established by Rev. Mr. Tennant at Neshaminy, Bucks County, was only a frontier log cabin 20 by 20 feet. But here for twenty years this persistent son of old Ireland trained a group of earnest students and made it the colonial cradle of the collegiate, academic, and ecclesiastical seminaries that now rank second to none in the Union—Princeton University, New Jersey; Jefferson, Pennsylvania; Hampden Sydney, Virginia; Union, New York, and others only less celebrated. A stout volume might be filled with the catalogues of the numerous schools of the higher grade in all parts of the Union which date from this humble day of “first things” in the wilderness of Pennsylvania. No body of the American people has contributed more powerfully to all the elements of our nationality—patriotism in war, intelligence and probity in citizenship, persistent industry by the most advanced methods, social morality, and practical religion.

From all these individual developments of school life, perhaps more effective from the sharp rivalry of sect, nationality, and social caste, was slowly evolved the growing body of the superior strata of Pennsylvania people, which for half a century was trained in such a university as was vouchsafed to no other American colony—the colonial life and labors of Benjamin Franklin. Nothing so fully proclaims the strange oversight of American written history as the fact that only within the past twenty-five years has the story of the educational training of the old North, under Benjamin Franklin, and, later, of the more recent South, under Thomas Jefferson, been accounted worthy even of “brief mention.” It is just being understood by our thoughtful people that we are more indebted to the educational influences represented by these two men than to any other cause. Both Franklin and Jefferson were less abundantly endowed with a special outfit of executive ability in the ordinary routine of statesmanship than several of the leaders of that eventful period, although both succeeded in “diffusing themselves” as an irresistible motive power through the entire body politic. But without the educational labors of Franklin during the fifty years previous and of Jefferson for almost half a century following the establishment of the National Government, even Washington would have failed in his magnificent leadership, having no reliable people to lead; and the South would have lost that uplift of enthusiasm for the secondary and higher and the aspiration for universal education which, more than all other influences, saved it from being destroyed by “the peculiar institution” which came so near achieving the separation of the Union in 1860-1865.

In this great education of the colonial people of the North Franklin began his work by the establishment of himself as a printer in the little city of Philadelphia at the age of 23. His great educational work was well begun before Thomas Jef-

erson was born; and before the writer of the Declaration of Independence had made the first announcement of his comprehensive educational policy to Virginia, the work of Franklin was virtually accomplished. To record the steps in this series of great labors, which became a true university of the people of the Northern colonies from 1729 to 1776, a period of more than forty-five years of this, in some respects most remarkable of American men, fitly called "a born teacher of men, ranking among the most distinguished moralists who have ever lived," is all the limits of this essay will permit.

In 1729, on his return from London, where his real manhood was sprouted, he opened his printing office and speedily led the profession in the colonies. The first newspaper of any ability, the *Pennsylvania Gazette*, was his creation. At 26 he organized the first subscription library, "the mother of all the North American subscription libraries." In 1732 he began the publication of *Poor Richard's Almanac*, a sort of annual people's magazine of practical information, wit, wisdom, and good culture to the masses of the colonial people. This continued twenty-five years, circulated 10,000 copies a year, and is rightly called "one of the most important publications in the world, the revered and popular schoolmaster of a great nation during its period of tutelage." In that and his journal he organized the present system of business advertising. This unique publication is described by its author in these words: "Not a tenth part of the wisdom was my own, but rather the gleanings that I had made of the science of all ages and nations." But here Franklin became the father of American journalism, that powerful influence which, in our day, has become the people's high school and the modifier and complement of all American institutions and agencies for the mental and religious training of the citizen. The *Junto Club*, a small secret organization of the foremost young men of Philadelphia, meeting to discuss and inaugurate schemes of public benefit, was the prolific parent of numbers of similar organizations, and is being revived to-day in the association of influential citizens for the reform and direction of our distracted municipal life. Becoming postmaster of Philadelphia, and afterwards Postmaster-General of the colonies in 1737, at the age of 31, he was inspired with the worthy ambition of the most entertaining of modern English novelists, Anthony Trollope, to establish a post-office in reach of every family, thus bringing the people of the colony in touch with one another by a regular dissemination of news. Meanwhile he had not forgotten the good push of the old Latin school in Boston, in which he was for a little time a student. He learned all the modern languages then taught, and was rapidly gaining the reputation for scientific observation that brought him, a self-educated boy, to the high distinction of a degree from Harvard and Yale and attracted the attention of the greatest universities of the world. At the age of 30 he was the moving spirit of the new "Philosophical Society," and was especially interested in investigation and experimenting in the directions of the natural sciences, agriculture, and manufactures. Along with these labors, all touching on the most vital educational influences of a new country, went a series of ingenious and valuable corresponding movements in public, municipal, and domestic life—the invention of the Franklin stove, the organization of the fire brigade, the night watch, and the city hospital. There seemed to be nothing on which this master spirit of the early American life did not lay his hands. Everywhere his ideas of the training of the mind went hand in hand with that practical education in religion and morality which he always declared the foundations of all successful human existence.

Meanwhile he cooperated heartily with the effort to establish a scheme of common education for the rapidly increasing German population of the colony, and suggested its most useful and practical feature, the setting up of a printing press, the publication of a newspaper, schoolbooks, and many useful pamphlets. But even he was not strong enough to resist the conservatism of the clergy of this people and the effort came to naught, with the later enterprise of the Franklin College for Germans, at Lancaster. It was only through these trials and sacrifices, just beginning to be

appreciated, that this hostility to the common schooling of all American children for a common citizenship has been overcome in Pennsylvania, even in these later years.

But the most notable educational scheme inaugurated by Franklin was the establishment of the "Academy and Charitable School of Pennsylvania," in 1743. In 1749 this infant enterprise was initiated by a board, of which Franklin was the chairman. A pamphlet, entitled "Proposals relating to the education of the people of Pennsylvania," was one of the earliest and still remains one of the ablest educational documents prepared in America. It develops, with great clearness and wonderful common sense, an ideal of a seminary of learning, remarkable for that day. His ideas of a suitable location, of school buildings, methods of instruction and use of apparatus, the advanced idea that the "rector should be a correct, pure speaker of the English tongue," drawing, elegant writing, instruction in English, etc., were the nearest approach to the most approved way of instruction by our present system of "language lessons." The training of the voice in elocution and debate; the thorough study of the classic and modern languages, without neglect of the mother tongue; a broader study of the natural sciences than prevailed anywhere in America at that time; the constant regard to moral discipline and correct living by the students; the annex of charity schools, which, beginning in the Friends' School, continued till 1876 a feature in the present University of Pennsylvania—all these were set forth in this early programme of the secondary and higher education, not surpassed in any subsequent publication in the country.

The reasons assigned for the establishment of this school in a later appeal to the city council of Philadelphia were (1) the necessity of educating American children at home; (2) that a larger class could be trained for the growing duties of public life; (3) that the present type of common-school teachers could be superseded by a body of trained scholars and respectable young men; (4) that the people themselves, of different nationalities and classes, could be fused in a common citizenship; (5) that the city which originated such an institution would greatly profit by it in all ways.

Founded by a combination of public and municipal contributions, placed under the control of a corporation representing various sects in religion, Franklin himself elected as "an honest man of no sect," the school was chartered in 1753 as an academy, and in 1755 by the provincial assembly with the three departments of charity school, academy, and college. At once it received 300 students; in 1763, 400, one-third in the college department, many from the South and the West Indies, with a sprinkling of Indian boys. Dr. William Smith was the first president, and remained in this position till the college was developed into the University of Pennsylvania at the close of the Revolutionary war. The indefatigable president raised \$30,000, and is said to have added \$100,000 to the funds of the new institution. The medical department, established in 1765, was the earliest of all schools of medicine in the Union. The law school came later. The college lost its charter and property during the tumult of the war, but emerged at the formation of the Republic in 1789 with more than its usual prestige.

Much of this valuable service of Franklin was rendered before the birth of Thomas Jefferson and much during Jefferson's school days. At the age of 44 Franklin, the great American "man of all work," retired from private business, ostensibly for literary leisure, but only to step out and up into the broader sphere of activity which landed him in the Colonial Congress at the age of 70, in many respects the most remarkable contribution of the colonial life to the new Republic.

It is impossible to estimate the intensity of the influence of such a man at such a critical period of the development of a people. Dr. Franklin was the splendid early contribution of New England to the life of the Central American colonies. He represented not the original Puritan influence that had wrought out the essential elements of the native civilization, but that broader element of cosmopolitanism in religion, government, society, and education, without which all other gifts would

have remained the special possession of a few prosperous provinces and not the characterization of an American civilization. Old England, with all its obstinacy and conceit of private personality and narrow and involved habits of life, has given to the modern world a group of the broadest-minded leaders of the race. In the same way New England, with a large body of its home-loving class so immersed in making its own town or city a model community that it can not appreciate the fact that the nation can not be a magnified Massachusetts or Connecticut, has yet given to the Republic, in every department of American life, an abundant share of the broadest-minded and progressive leadership of the country. And nowhere better than in the Pennsylvania of the colonial epoch could such a man find the most conspicuous opportunity to put forth his unique and all-pervading influence, to set in motion agencies and institutions which, in the progress of the years, would bring into harmony the most antagonistic classes and, out of the most hopeless diversity, build a State in more than one respect a model Commonwealth.

It was largely through the influence of this greatest of American popular educators that Philadelphia, the city of his adoption, at the breaking out of the war was found to be the foremost of American communities in science, letters, and polite society, and was eminently the fit place for the session of the first Colonial Congress, the Declaration of Independence, and the formation of the new nationality; all represented by the old bell that once more, on the late memorial year, renewed its travels, passing from its home to the great representative city of the new Northwest; wherever it went, as in the old time, "proclaiming liberty throughout the land to all the inhabitants thereof."

THE EPOCH OF THE REVOLUTION AND ESTABLISHMENT OF THE NATIONAL GOVERNMENT, 1775-1800.

We have now reviewed, somewhat in detail, the course of educational development in the thirteen American colonies, from the settlement of each to the breaking out of the war of Independence. Our aim in this examination has not been the recapitulation of the details of educational history so much as the endeavor to ascertain to what extent the educational practices in each of these provinces were an anticipation of the American common school.

The one characteristic quality of the American system of common-school education which differentiates it from the public schools of all European countries is that, from the foundation stone upward, it is the attempt of a free people to educate itself. In the American common school the responsible people, armed with the right of suffrage, initiate the movement for a system of public education through their legal representatives, chosen by free election or by legal process in towns, counties, municipalities, and States. They put the system in legal shape; support it by permanent State or local funds and taxation, all under the control of the people; establish the conditions of attendance and the rules and regulations for the conduct of teachers and pupils; determine the character and extent of the courses of study and methods of mental, moral, æsthetic, and industrial training. In short, through the republican agency of a flexible majority, always open for correction at the polls, the people, organized as the Commonwealth, take in charge everything connected with the educational training of children and youth, so far as concerns the qualification for good American citizenship.

But, while more than one-half the States of the Union have assumed the right to demand a certain amount of schooling for all children, no State has presumed to interfere with the right of the parent in respect to the method by which this shall be secured—whether by home, neighborhood, private, public, or any system that produces the desired result. On the contrary, all the States, at different times, have aided and encouraged many sorts of schools by subsidies, exemption from taxation, and other favorable legislation, although the tendency everywhere at present is to limit Government aid strictly to institutions under State control.

This idea of universal education underlies the action of the Government of the United States in its vast system of national subsidies for education, by perpetual grants of public domain, gifts of money, and the support of a National Bureau of Education. The Government is also involved in the practice of national, State, and local encouragement of literature, art, music, the founding of libraries and museums, and whatever directly and often indirectly ministers to the education of a people. It is also in intimate connection with the national and State laws for the freedom of religion and the protection of all forms of worship against public or private interference, even to the extent of exempting vast amounts of ecclesiastical property from taxation. And even more intimately connected with the educational system is the entire body of legislation, every year becoming more stringent, for the limitation of exclusive and arbitrary parental authority and the protection of children from the injustice of home or corporate tyranny and greed through vagrant, labor, and industrial laws. The State even follows the child and youth into the house of correction and the prison, and, by a wise and humane direction of his mental, moral, and manual training there, seeks to dry up the fountains of youthful depravity.

In this sense what we call the American system of universal education is nothing more nor less than the chief motive power of our American civilization, so inextricably intertwined with our republican form of government and order of society that to abolish or to essentially modify it would be equivalent to placing a new soul inside the body of our entire American life.

It is therefore absolutely essential to the rectitude of history that in telling the story of the American common school the author of this essay should endeavor to show, as clearly as possible, the educational habits of the American people from the beginning as the best guide to the characteristics and career of each State and section of the Republic. For only by a careful consideration of this "making of a people" during the earliest period of its occupation of a new country can any fair judgment be passed on any portion of its subsequent history. We have endeavored to set forth, with such accuracy and fairness as we could command, the facts concerning education in the thirteen New England, Central, and Southern American colonies before the opening of the great epoch of the war of Independence. If these facts have been correctly stated and their relations to the general development of individual, social, and civic affairs have been actually indicated, a new light will be shed upon the history of the epoch of the Revolution and the establishment of the National Government, including the twenty-five years from the beginning of the war to the opening of the nineteenth century.

An analysis of the system of education inaugurated at the settlement of Massachusetts and Connecticut, and incorporated into the permanent policy of the New England colonies during the one hundred and fifty years previous to the Revolution, and the relations which that system of youthful training bore to the formation of what is regarded as the Puritan Society, finds complete illustration in the history of New England during the war for independence. We have shown how, by a fortunate unity of sentiment on the fundamental question of all civilization, the control of public affairs by the mass of the people in the New England colonies, the direction of the church, government, education, and in large degree of social and private life were practically in the hands of the responsible people of each community. The New England school from the first, in all its departments, was the people's method of educating the children for the duties of American life. Thus, while the development of a stalwart and obstinate personal independence was the inevitable result of the Puritan idea of sole direct responsibility to God in thought and action, this harmony of feeling and opinion produced the most compact form of society then on the globe. Nowhere in the American provinces had there been such a triumphant success among a free people in the art of living together as in these colonies. Thus at the breaking out of the war, after the first "big lift," that landed the small upper-class Tory contingent over in the Province of Nova

Scotia, there was virtually no conflict of political opinion in New England till the end of the war. These four colonies, though inferior to the central and southern in population, furnished one-half, probably a majority, of the permanent soldiery. Washington stated that at the close of the war the majority of the soldiers were from New England, with the hearty addition: "God bless the New England troops."

But just this unanimity of sentiment and action was doubtless somewhat a bar to the development of eminent civil and military leadership. Fortunately, by all odds the greatest son of New England was no longer an inhabitant of his own native city. The great agitators, like Sam Adams, Otis, Mayhew, and Warren, the statesmen of the John Adams type, and the military men, with the exception of Greene, were hardly in the foremost rank. The social and public atmosphere of colonial New England was not then favorable to the growth of men of great executive capacity in military or civic affairs. A people individually the most obstinate and unmanageable and unitedly the most compact and uncompromising on the face of the earth did not relish the habit of "training under" great leaders in any department of life.

It was reserved for the central and southern colonies to furnish this indispensable leadership during the memorable era of twenty-five years from the opening gun at Lexington to the close of the century. Owing to the great diversity of the national origin, religious belief, and social status of the populations of the Central States—New York, Pennsylvania, and New Jersey—there had been no effective general system of education there for the masses of the people during the long years since the advent of the Dutch, Swedish, and British settlers on the banks of the Hudson and the Delaware. The schooling of these generations had been in family, neighborhood, private, and parochial schools, with a moderate supply of academical and higher seminaries, generally under the control of religious sects or private close corporations.

Thus the peculiar characteristics of every set of people had been perpetuated and fixed with the passing years. At the breaking out of the war the Germans and the different classes of the British people in Pennsylvania and the Dutch and English of New York were to a great extent separate peoples, even the unity of language was not yet achieved. The wide difference of religious creeds and politics intensified this separation. The extremes of social life, all the way from the feudal patron to the feeble tenant on his estate, added to this inevitable distinction.

In such a condition of affairs it was unreasonable to expect the same almost unanimous response of the mass of the people to the call of the united provinces as in New England. These colonies from the first, though in their public policy not behind others, were greatly disturbed by a widespread disloyalty to the patriot cause. At the darkest crisis of the conflict there was almost seen in some sections danger of a "stampede" of submission to the royalist cause. All the leading cities of these colonies, excepting Albany, were at different times in possession of the enemy. New York was almost destroyed by its occupation during the entire period of the war.

But from this inevitable separation of the superior class from the masses of the people and their education in private and collegiate schools at home and abroad these colonies found themselves in possession of a body of remarkable men of great social and civic reputation who, at the outbreak of hostilities, grasped the reins of public affairs and held these important provinces up to their duty through the discouragements and perils of the conflict. At the head of this illustrious company was Benjamin Franklin, the great public schoolmaster of the central colony of Pennsylvania for fifty years, to whom the country owed more than to any other man for such political unanimity as was secured among the people. It is only necessary to recall the long list of eminent statesmen, jurists, financiers, and administrators in these colonies during the turbulent years succeeding the advent of peace, the formative period of the National Government, to see that here was illustrated the peculiar

power of such an order of society to develop strong and politic leaders of communities in the hour of imminent peril.

Even more conspicuous was the illustration of this fact in the Southern States. From the settlement of Virginia, in 1607, to the first bloodshed of the great war, in North Carolina in 1771, there had been no effective system of public education seriously attempted. While the superior class in various ways did secure moderate scholastic training for their own children, there was at the bottom of society a great body of people almost entirely deprived of the opportunity of schooling, to say nothing of the negro slaves who were simply a burden and hindrance from the first.

But through the concentrated force of the Southern colonial governments and the high aristocratic type of social and educational life there had been developed a splendid superior class; not an aristocracy of blood and heritage, in the European sense, but a group of the descendants of the powerful conservative class that was drifted into the section, as one stratum of British immigration. The more favored of these people sent their sons to England for education or supplied the want at home, as in the case of William and Mary College, Virginia.

The result was the remarkable body of men, especially from the Old Dominion, who, at the beginning, came to the front and for a long generation were the chief administrators of the Continental and National Government. It can not be denied that this original constitution of Southern society was highly favorable, in its superior class, to the development of a habit of command in private and executive capacity in certain departments of public affairs, in peace and war. And it appears nothing less than a Providential circumstance that, while the foundation of the new government was in constant peril of wreck on the reef of an obstinate idea of colonial independence, while each colony was esteeming itself a little nation and contending, amid a noisy crowd of rival nationalities, for its uttermost rights and privileges, the leaders of public affairs should so largely have come from the South, where this tendency was strongest. We owe it greatly to the firmness of Washington, Marshall, and Madison, and to the comprehensive and intense patriotism of Jefferson and the statesmen that adopted the opposing theories of these great leaders, that the influential class of the Southern colonies, the planters, were persuaded to come into the Union on the basis of a nationality which proved itself powerful enough, in the day of peril in 1860, to overwhelm the entire industrial and social organism of their States in absolute ruin and place in the amended Constitution of the United States a repudiation of the extreme theory of State independence, which was the radical question involved in the civil war.

In 1788 it would have been impossible to form a union had it not been for the wise and patriotic mediation of this group of statesmen, with Washington, Jefferson, and Franklin towering above the heads of all contemporaries as beacon lights for the ship of state, tossed on a stormy sea. And in no other school could this body of statesmen have been trained for this emergency than in the Southern society before the war of the Revolution. The time had not yet come there for the establishment of the people's common training school of citizenship; indeed, it was to be deferred yet more than half a century, and only to come after a conflict more terrible than the original struggle for republican institutions. But there was something during the closing twenty-five years of the eighteenth century more important than this—the possibility of a union that would insure a great republican nationality in the New World. This secured, all good things were bound to come in due time.

Up to 1776 there had been ten colleges established in the thirteen provinces, including Hampden-Sidney, Virginia, founded in that year—eight in the New England and Central colonies and two in Virginia. Only two of these, Harvard and the University of Pennsylvania, could be regarded unsectarian in religion. For a generation an increasing number of the superior young men of the South had been graduated from these Northern schools, especially Harvard, Princeton, and the University of

Pennsylvania. Besides these there were probably less than one hundred academies or secondary schools of real importance in all the thirteen colonies at this time. But out of this somewhat meager supply—even for a new country, at that time containing a white population of some 2,000,000—the more ambitious young men of the different provinces had managed to get an education that served them well in the emergencies of public life to which they were exposed. These, with the considerable class educated in European schools and a few men of transcendent native genius, like Franklin and Washington, as nearly self-educated as men of that type can be, were largely represented in public life from the opening Colonial Congress to that great assembly which framed the Constitution of the United States. Of the members of the latter body 45 were graduates of colleges, and all were of the class now regarded as educated. Not a member personally represented the uneducated masses that did exist in all, and especially in the Central and Southern colonies. Of the 55 members of the convention that framed the Constitution of the United States 45 had received collegiate instruction, 9 had studied at Princeton, 4 in Yale, 3 in Harvard, 2 in Columbia, 1 in the University of Pennsylvania, probably 7 in William and Mary; 1 had been a student in St. Andrew's, Scotland; 1 hailed from Glasgow, and 1 from Oxford; 3 had read law in the Temple, London. Franklin had been a scholar in the Boston Latin School, and had made great use of the Philadelphia library. He was a Fellow of the Royal Society in England and LL. D. from Oxford, Edinburgh, and St. Andrew's. Roger Sherman had labored as a shoemaker to send his younger brothers to college, and was the treasurer of Yale and a judge of the superior court of Connecticut; except Franklin, the oldest member of the convention. Washington had become LL. D. of Harvard years before, and was afterwards chancellor of William and Mary, Virginia.

Happily, the day had not dawned when ignorance, vulgarity, and the power to lead a rabble were considered qualifications for elevation to the most important offices of public trust; nor even the other insanity of free government, that a nominal majority secured by any and all means is that "voice of the people" which may be accepted as the "voice of God." Chatham and Burke declared in Parliament that the leaders of the American people in this memorable struggle for independence were men of extraordinary power, and Gladstone has added his testimony that the American scheme of government is the supreme effort of eminent statesmanship in history. So, through the influence of the different systems of education working through the social organisms of the old thirteen colonies, came forth that beautiful combination of elements which fashioned the American Republic before the great clock had struck the hour that ushered in the memorable nineteenth century.

The immediate period of the war of Independence was in no sense a favorable time for the inauguration of schemes of education; in fact, it was with the greatest difficulty that the schools already established could be kept open. Two of the colleges were closed, a majority of the academies suspended their sessions, and the elementary education of the people of all sorts was greatly disturbed. Yet during these years of peril to the success of the patriotic cause, and in some respects to the existence of the colonial life, even in the condition under which it embarked in the desperate contest, the spirit of education was not completely stifled.

Between the years 1776 and 1785 five new colleges had been established: Washington and Lee, Virginia; Washington and St. John's, Maryland; Nashville, Tennessee; and Dickinson, Pennsylvania—four in the old South and one in the new territory of Tennessee, beyond the mountains. Only one of these, Dickinson, Pennsylvania, was under ecclesiastical control, the remainder being established by their States and nonsectarian. Of these, Nashville, Tennessee, no longer exists, save in its new connection with a different organization.

Between 1784—the close of the war—and 1796 nine additional colleges had been created: Georgetown, District of Columbia; the University of North Carolina; the

University of Vermont; the University of East Tennessee; Williams College, Massachusetts; Bowdoin, Maine; Union, New York; Middlebury, Vermont; and Frederick, Maryland. Of these, Georgetown, District of Columbia, was and is Roman Catholic; Middlebury, Vermont, and Williams, Massachusetts, are Congregational; and the remaining six nonsectarian, three of them under State supervision. Williams and Middlebury, to-day, like Harvard and Yale, the University of Pennsylvania, and Columbia, New York, are nonsectarian colleges, under the control of private corporations and, to some extent, of associations of their own alumni.

This fact of the gradual withdrawal of college life from ecclesiastical control indicates a growing jealousy of the interference of the church with education, especially in institutions supported, subsidized, or in any way implicated with the State. Like all periods of great social and civic agitation and transition, the Revolutionary epoch had shaken the foundation of theological belief and disturbed the ecclesiastical polity of all the churches. The Congregational Church of New England was the only religious body that had no occasion to change its ecclesiastical polity, since this was the only form of church organization original to America. But within the twenty-five years following the organization of the National Government all the churches transferred from abroad, save the Roman Catholic, had reorganized under conditions adapted to the new order of affairs, which, first in the history of the world, cut off, with a decided and evidently unchangeable determination of the people, all connection between church and state in the National Government, a provision adopted in the Constitution of all the present States of the Union.

At the close of the century New York had nineteen academies and Massachusetts as many, while the Central and Southern States were probably as well supplied. In fact, there were a greater number of colleges and possibly of academies of the first class in the United States in proportion to the white population at that time than at present; the development of the higher grades of the grammar, free high, and normal, and the preparatory department of the majority of State universities, which constitute the upper story of the common-school system, having to a considerable extent supplied the demand for these departments of instruction. Besides, until the establishment of the elementary and grammar departments of the common school, especially in the South, large numbers of the children and youth now educated in public were compelled to use the private schools. With the exception of a small number of these academies established by the fraternities of the Masonic and other orders, neighborhood, private, and in some cases institutions supported by the cooperation of municipal governments, the majority of these secondary schools were the fruit of the great revival among the different religious sects which broke forth at the beginning of the present century, on account of the separation of church and state.

Yet from the first the development of the American common school in all its departments through all States of the Union has never gone on in a spirit of hostility to any sort of private or denominational schemes of instruction. Neither, by any legislative enactment, have the people in any way interfered with the development of the broad realm of educational life outside the common school. In this also does the American differ from the corresponding systems of public education in Europe in avoiding conflict with the liberty of this region of school life. Even the logic of the public-school laws and the spirit of the constitutional safeguards of the people against ecclesiastical and private invasion of popular rights has been and still is occasionally sacrificed through the great desire of public authorities to give aid and comfort to all worthy enterprises for the schooling and general culture of the people.

Between the close of the Revolutionary war and the renewal of the conflict against Great Britain in 1812 only ten of the States then in the Union had placed in their new constitutions a recognition of the obligation of an American Commonwealth to educate the whole people. Of these Massachusetts, Connecticut, New Hampshire, and Vermont were New England States, and their constitutional provisions were but a more formal declaration of what had been the statute law and common practice of

those colonies from their earliest settlement. An examination of these provisions will not only define the attitude of these Commonwealths to the common school, but also to the colleges established under the colonial regime and at this period to a limited degree administered under the auspices of the State.

MASSACHUSETTS.

It is stated in Barnard's American Journal of Education that "the article on education in the constitution of Massachusetts of 1780 is one of the first of the sort ever incorporated into the organic law of a State." Although Massachusetts was anticipated by four States, her action in 1780 shows in what a decided way the Bay State "put down its foot," at the beginning of its existence as one of the United States of America, in behalf of the obligation of educating the whole people, the practice of which was coeval with her existence, the first public action in the matter having been taken in 1642, within ten years of the settlement of the Massachusetts colony.

The article on education in the constitution of 1780 was a part of the second constitution framed, that of 1778 having been rejected by the people. Section 2, making it imperative on legislators and magistrates "to cherish the interests of literature and the sciences, and all seminaries of them," was framed by John Adams, and has been retained until this day without the slightest alteration.

THE UNIVERSITY AT CAMBRIDGE, AND ENCOURAGEMENT OF LITERATURE, ETC.

SECTION I.—*The University.*

ART. 1. Whereas our wise and pious ancestors, so early as the year one thousand six hundred and thirty-six, laid the foundation of Harvard College, in which university many persons of great eminence have, by the blessing of God, been initiated into those arts and sciences which qualified them for public employments, both in church and state; and whereas the encouragement of the arts and sciences, and all good literature, tends to the honor of God, the advantage of the Christian religion, and the great benefit of this and the other United States of America—it is declared that the president and fellows of Harvard College, in their corporate capacity, and their successors in that capacity, their officers and servants, shall have, hold, use, exercise, and enjoy all the powers, authorities, rights, liberties, privileges, immunities, and franchises which they now have, or are entitled to have, hold, use, exercise, and enjoy; and the same are hereby ratified and confirmed unto them, the said president and fellows of Harvard College, and to their successors, and to their officers and servants, respectively, forever.

2. And whereas there have been at sundry times, by divers persons, gifts, grants, devises of houses, lands, tenements, goods, chattels, legacies, and conveyances, heretofore made, either to Harvard College in Cambridge, in New England, or to the president and fellows of Harvard College, or to the said college by some other description under several charters successively; it is declared that all the said gifts, grants, devises, legacies and conveyances are hereby forever confirmed unto the president and fellows of Harvard College and to their successors in the capacity aforesaid, according to the true intent and meaning of the donor or donors, grantor or grantors, deviser or devisors.

3. And whereas, by an act of the general court of the colony of Massachusetts Bay, passed in the year one thousand six hundred and forty-two, the governor and deputy governor, for the time being, and all the magistrates of that jurisdiction, were, with the president, and a number of the clergy in the said act described, constituted the overseers of Harvard College; and it being necessary in this new constitution of government to ascertain who shall be deemed successors to the said governor, deputy governor, and magistrates, it is declared that the governor, lieutenant-governor,

council, and senate of this Commonwealth are, and shall be deemed, their successors, who, with the president of Harvard College for the time being, together with the ministers of the Congregational churches in the towns of Cambridge, Watertown, Charlestown, Boston, Roxbury, and Dorchester, mentioned in the said act, shall be, and hereby are, vested with all the powers and authority belonging or in any way appertaining to the overseers of Harvard College: *Provided*, That nothing herein shall be construed to prevent the legislature of this Commonwealth from making such alterations in the government of said university as shall be conducive to its advantage and the interest of the republic of letters, in as full a manner as might have been done by the legislature of the late Province of the Massachusetts Bay.

SECTION II.—*The encouragement of literature.*

Wisdom and knowledge, as well as virtue, diffused generally among the body of the people, being necessary for the preservation of their rights and liberties; and as these depend upon spreading the opportunities and advantages of education in the various parts of the country and among the different orders of the people, it shall be the duty of the legislatures and magistrates, in all future periods of this Commonwealth, to cherish the interest of literature and the sciences, and all seminaries of them; especially the university at Cambridge, public schools, and grammar schools in the towns; to encourage private societies and public institutions, by rewards and immunities, for the promotion of agriculture, arts, sciences, commerce, trades, manufactures, and a natural history of the country; to countenance and inculcate the principles of humanity and general benevolence, public and private charity, industry and frugality, honesty and punctuality in all their dealings, sincerity, good humor, and all social affections, and generous sentiments, among the people.

The following article was ratified in 1857 as an amendment to the constitution:

"ART. XX. No person shall have the right to vote, or be eligible under the constitution of this Commonwealth, who shall not be able to read the constitution in the English language and write his name: *Provided, however*, That the provisions of this amendment shall not apply to any person prevented by a physical disability from complying with its requisitions, nor to any person who now has the right to vote, nor to any persons who shall be sixty years of age or upwards at the time this amendment shall take effect."

John Adams, second President of the United States, drew up the second section, under which, with subsequent additions, the present elaborate system of the common schools of Massachusetts is supported. He relates that his attention was called to the importance of scientific associations and collections of natural history, etc., by his observation in Europe, and that, after his return, at his earnest suggestion, this portion of the constitution relating to "the encouragement of private societies and public institutions by rewards for the promotion of agriculture, arts, science, commerce, trades, manufactures, and a natural history of the country," was inserted in the fundamental law and written by himself. Also, that the following clause, defining the public obligation to recognize to the uttermost the duty to "countenance and inculcate" the entire code of Christian morality, including, as by a quiet criticism of the oppressive Puritan solemnity, "good humor, social affections, and generous sentiments among the people," was his own work. Another result of his influence was the establishment of the American Academy of Arts and Sciences, a scientific association resembling that established in Philadelphia by Dr. Franklin in 1780. At this date Massachusetts had a population of 300,000; by 1800, increased to 423,000.

CONNECTICUT.

The State of Connecticut at this period was still living under the colonial school statute of 1650, which was but a free revision of the previous local laws of the colonies of Hartford and New Haven, and in large measure a copy of the early legislation

of Massachusetts. Under this direction the common-school system of public instruction was maintained for two hundred years. In 1795 the legislature established "a permanent and irreducible fund, the income of which shall be applied to the support of common or public schools." This, in continuation of the policy of 1733, was the first public-school fund established in the United States. It was derived from the public lands, "a portion of the territory of Ohio, now known as the Connecticut reserve, because it was reserved by the State for its own use when it ceded its claim to the whole national domain beyond of the same width as its own territory." In 1800 the population of Connecticut was 251,000.

NEW HAMPSHIRE.

The State of New Hampshire, with a population in 1790 of 142,000, in 1784 placed in its constitution the following provision:

"ENCOURAGEMENT OF LITERATURE, ETC.

"Knowledge and learning generally diffused through a community being essential to the preservation of a free government, and spreading the opportunities and advantages of education through the various parts of the country being highly conducive to promote this end, it shall be the duty of the legislators and magistrates, in all future periods of this government, to cherish the interest of literature and the sciences and all seminaries and public schools; to encourage public and private institutions, rewards and immunities for the promotion of agriculture, arts, sciences, commerce, trades, manufactures, and natural history of the country; to countenance and inculcate the principles of humanity and general benevolence, public and private charity, industry and economy, honesty and punctuality, sincerity, sobriety, and all social affections and generous sentiments among the people."

This, with only verbal alterations, was copied from the provision in the constitution of Massachusetts.

The present State of Maine was then a portion of Massachusetts and subject to the constitution and laws of that State.

RHODE ISLAND AND VERMONT.

Rhode Island, with less than 70,000 people, had not yet come into the great sisterhood of common-school Commonwealths. Vermont, the first State admitted to the Union, in 1791, with 85,000 people in 1790 and only 162,000 in 1800, in its amended constitution of 1793 placed in her fundamental law the following provisions:

"SEC. 40.—A school or schools shall be established in each town by the legislature, for the convenient instruction of youth, with such salaries to the masters paid by each town; making proper use of school lands in each town, thereby to enable them to instruct youth at low prices. One grammar school in each county, and one university in this State ought to be established by direction of the general assembly.

"SEC. 41. Laws for the encouragement of virtue and prevention of vice and immorality ought to be constantly kept in force and duly executed; and a competent number of schools ought to be maintained in each town for the convenient instruction of youth, and one or more grammar schools be incorporated and properly supported in each county in this State. And all religious societies or bodies of men that may be hereafter united or incorporated for the advancement of religion and learning, or for other pious and charitable purposes, shall be encouraged and protected in the enjoyment of the privileges, immunities, and estates which they in justice ought to enjoy, under such regulations as the general assembly of this State shall direct."

NEW YORK.

The first constitution of the State of New York, in 1777, contained no reference to education. In 1792 the new Commonwealth had a population of 340,000. At the first session of the legislature after the adoption of the revised constitution of 1787

Governor George Clinton spoke out after this fashion: "Neglect of the education of youth is one of the evil consequences of the war. Perhaps there is scarce anything more worthy your attention than the revival and encouragement of seminaries of learning, and nothing by which we can more satisfactorily express our gratitude to the Supreme Being for his past favors, since piety and virtue are generally the offspring of an enlightened understanding."

The legislature at once responded by organizing the board known as "The regents of the University of New York," and placed it in general charge of the colleges and academies of the State. Whether, on the whole, the organization of this time-honored body, which seems in late years to have taken on a new life, has been a help or a hindrance to the growth of an effective system of common schools in New York during the past century is a question still earnestly discussed by the educators of the Empire State. But it seems to have gone about its work at first with favorable intentions toward popular instruction.

In 1789 an act was passed by which two lots in each township of public land should be set apart "for gospel and school purposes." The State at this time was possessed of 7,000,000 acres of wild land in what is now known as northern and western New York. The regents appealed to the legislature in behalf of the education of the people and children to the extent of "reading and as much of writing and arithmetic as to enable them, when they come forward into active life, to transact with accuracy and dispatch the business of life." This, with the repeated reminders of the great governor, George Clinton, moved the legislature in 1792 to appoint a committee of its members to frame a scheme of popular instruction. The soul of this, as of so many of the subsequent movements in New York in behalf of common schools, was a native of Connecticut, Mr. Adam Comstock, a representative from Saratoga. Another restless and somewhat "cranky" son of the "land of steady habits," Jedediah Peck, a representative from Otsego County, appears to have held the laboring oar in the management of this frail craft of universal education through the turbulent seas of these early experiments for schooling the children in the Empire State.

On April 9, 1792, Governor Clinton signed the first of the numerous legislative acts under which the State of New York has risen to its present high eminence in popular education. It appropriated the sum of \$50,000 annually for five years to encourage and maintain schools where the children of the State could receive "a good English education." The board of supervisors of each county was required to raise by tax a sum equal to one-half the State grant. The electors of the county were authorized to choose commissioners, to whom should be intrusted the supervision and direction of the schools and the handling of the public-school moneys. A local board of trustees could be chosen by the votes of each school district, to cooperate with the commissioners in all matters relating to the choice of teachers and general management of the schools.

As there were in the State at this time probably in the neighborhood of 50,000 children of the practical school age, 6 to 14, this arrangement of \$75,000 raised by taxation at best could only be regarded as a fair beginning of the greatest work that confronts the statesmanship of an American Commonwealth—the sufficient and unceasing provision for the demand even for elementary education. That the people eagerly caught at even this meager provision is proved by the fact that in the only year in which even a partial report was made, 1798, there were 1,352 schools and nearly 60,000 children under instruction during some part of the school year.

Why an opening so promising should have languished before the end of the first five years' appropriation, and why it should have been "substantially abandoned" by the year 1800, has not been clearly explained.

But the colonial history of New York lets us into the real cause of the failure of its experiment. The new Commonwealth was not yet abreast with its great advocates and leaders of public education who had enacted the first law. While the

successive governors like Clinton, Lewis, Jay, and Tompkins, representing a noble array of enlightened friends of public education, saw and deplored the difficulties in the path of a general training of the young citizens of the Commonwealth, the "Middle estate," which rules everywhere in America, was in no present accord with this policy. The high, aristocratic, social tendency which succeeded the breaking up of the patroon feudalism of the early Dutch settlers; the absorption of the religious sects in a chronic war of creeds and politics; the indifference of great masses of the people who, well enough disposed to send their children to school, had still no fixed determination to compel their political leaders to open the wide door for the teaching of the masses; the sharp division of nationalities that still parceled the dwellers in the several localities almost into separate and hostile peoples—these, with other characteristic obstacles, broke down the experiment and left the Commonwealth for the first dozen years of the new century without a system of public education.

The corner stone of the present common-school fund of the State was laid in 1805, in the dedication of 500,000 acres of public land.

NEW JERSEY.

At the adoption of its first State constitution, in 1776, New Jersey contained a population of 184,000. This instrument contained no allusion to schools or education. It was not till 1816 that the first act to create a fund for the support of free schools was adopted, and the first distribution of the income of this fund was postponed till 1829, while the first constitutional provision for free education appears in 1844.

PENNSYLVANIA.

Dr. James P. Wickersham, in his admirable History of Education in Pennsylvania, a model for all similar works, draws a discouraging picture of the condition of that Commonwealth during the Revolutionary epoch. In 1790 Pennsylvania was the second American State in population, containing 435,000 people; only surpassed by Virginia, with 442,000 whites and more than 300,000 negroes, and in available resources, if not in actual valuation, the wealthiest of the original thirteen. Yet the unhappy contentions of the past one hundred and fifty years among its heterogeneous classes of immigrants, intensified by the disagreements of religious sects, the jealousies of rival classes, and the conflict of the Government and the masses at home with the original semifederal government of the Penn family, had so distracted the leading people and impoverished great masses of the scattered rural settlers that it seemed less probable than ever that any decisive action could be taken for the encouragement of general education by the State.

Says Dr. Wickersham: "At the time of the breaking out of the Revolutionary war the condition of education in Pennsylvania was probably less promising than at any other period before or since. The population of the State was about 350,000, for the most part scattered over a large extent of territory. The liberally educated men among the earliest settlers had gone down to their graves, and in most cases their learning had been buried with them. Life in the New World had proved unfavorable to the transmission of intellectual tastes, and scholars were more numerous among the fathers than among their sons. The mass of the people were too poor, too busy in earning a livelihood, too severely pressed by the hardships they were compelled to endure in an American wilderness, too much absorbed in the political and religious agitations and controversies that long distracted the province, to make the necessary effort to provide means adequate to the purpose for the education of their children. Penn and his immediate successors strongly favored education, and the earlier assemblies passed some wholesome laws relating to the establishment of schools; but for more than fifty years before the Revolution the subject was almost totally neglected by the public authorities. The several religious denominations

established a large number of schools, and in many neighborhoods the people in general united in providing the means of an elementary education; but all that was done in this way came far short of covering the whole field. In 1775 not only was the number of scholarly men in the province small, but comparatively few grown persons could do more than read, write, and calculate according to the elementary rules of arithmetic, and many remained wholly illiterate. There was little demand for higher institutions of learning, and few existed. The college and the Friends' public school in Philadelphia, the academy at Germantown, and scarcely a half a dozen private classical schools in the older settled counties, with in all an attendance of three or four hundred students, absolutely exhaust the advantages of this character enjoyed at home by our Revolutionary fathers."

Still the friends of popular education, under the inspiration of the Declaration of Independence, succeeded in placing in the provisional constitution of the State, framed in the same year with the immortal Declaration, 1776, the following brief provision:

"Section 45. Laws for the encouragement of virtue and prevention of vice and immorality shall be made and constantly kept in force, and provision shall be made for their due execution; and all religious societies or bodies of men heretofore united or incorporated for the advancement of religion or learning, or for other pious and charitable purposes, shall be encouraged and protected in the enjoyment of the privileges, immunities, and estates which they were accustomed to enjoy, or could of right have enjoyed, under the laws and former constitution of this State.

"A school or schools shall be established in each county by the legislature, for the convenient instruction of youths, with such salaries to the masters, paid by the public, as may enable them to instruct youth at low prices; and all useful learning shall be duly encouraged and promoted in one or more universities."

Of this brief reference to education in the provisional constitution in 1776 Dr. Wickersham says:

"This provision, broad for the time, contemplates two things: The establishment of schools for elementary instruction, and of institutions of a more advanced grade for higher instruction. * * * The framers of the constitution of 1776, in adopting this provision, were approaching free-school ground, but if they saw it at all it was only in the dim distance.

"The period of the Revolution, as might well be supposed, was almost wholly an educational blank. The only act relating to education passed by the general assembly during the war was one abrogating the charter of the college, academy, and charitable school of Philadelphia, and founding upon its ruins the University of Pennsylvania. This was done in the heat of the Revolutionary struggle, on account of the alleged disloyalty of some of the trustees and professors connected with the old institution."

In 1790 this original provision was renewed and placed in the revised constitution of the State, where it remained, the only clause in the fundamental law referring to education until 1871. But it was only through the persistence of Timothy Pickering, a member of the convention, a native of Massachusetts, and a representative of the New England settlers of the Wyoming Valley district, where public schools had long been sustained under local law, that the effort to throw the responsibility of the legislature to establish schools upon the several counties, thus, as the historian remarks, "making any law establishing free schools or making the schools free even to the poor unconstitutional," was defeated, and the clause finally worded as follows:

"SEC. 1. The legislature shall, as soon as conveniently may be, provide by law for the establishment of schools throughout the State, in such a manner that the poor may be taught gratis.

"SEC. 2. The arts and sciences shall be promoted in one or more seminaries of learning."

But although it is comparatively easy to place even liberal provisions in a constitution and to formulate them into law, neither constitutions nor laws enforce themselves. The majority of the leading classes in Pennsylvania were opposed to any scheme of public instruction that would loosen the grip on education already held by the different religious bodies in the State. The University of Pennsylvania was reconstructed and purged of Toryism during the war and the State began by a commendable show of liberality in granting to this and various new denominational colleges and seminaries properties from confiscated and other public lands. The legislature enacted that 60,000 acres of public land should be appropriated and put in fit shape to be sold "for the sole and express purpose of aiding public schools." But the public schools never received any benefit from this appropriation; the revenue, if any, of this domain, according to a time-honored practice in all States not supporting the common school, being quietly appropriated by the various private and denominational schools, which, under the name "college," or whatever higher title could magnify their importance, were always on the watch to replenish their scanty finances.

Indeed, the final provision in the constitution of 1790 was so read for forty years as to evade the obligation to establish a system of schools common to all classes and conditions of the people. Under the provision, "The poor may be taught gratuitously," the practice for many years was simply to provide for the education of the children of the poor in the neighborhood and church schools, thus preventing the original intent of the constitutional provision and forcing the State virtually to subsidize this class of institutions. The original educational heresy that still vitiates the public-school system of England, that common schools are schools for the poor who can not educate their children in the same way as their better-off neighbors, had then full possession of the American mind from Pennsylvania down to the Gulf and out to the borders of Mexico.

But we need not infer from this disheartening record that the faith in universal education as the motive power of an American State was dead or inactive in Pennsylvania. Among the most eminent and powerful advocates of the common school was Dr. Benjamin Rush, of Philadelphia, the friend and colaborer of Dr. Franklin in all that related to the elevation of the people in his State and the true glory of his city. As early as 1786 Dr. Rush addressed to the legislature and citizens of Pennsylvania a practical and comprehensive "plan for establishing public schools." It was, in substance, the same plan that Thomas Jefferson and George Wythe had presented to the legislature of Virginia in 1779. It provided for a State university, subsidized by the State; for four colleges, one for the German population of the Commonwealth, established at convenient localities; and for free schools for every one hundred families, where the children might be schooled in elementary studies in English and German. In support of this plan of free education he wrote these noble words, which will bear publication alongside the Declaration of Independence as a concise and unanswerable statement of the grounds of the public support of universal education:

"Let there be free schools established in every township, or in districts consisting of 100 families. In these schools let children be taught to read and write the English and German languages and the use of figures. Such parents as can afford to send their children from home and are disposed to extend their education may remove them from the free school to one of the colleges.

"By this plan the whole State will be tied together by one system of education. The university will, in time, furnish masters for the colleges, and the colleges will furnish masters for the free schools, while the free schools, in their turn, will supply the colleges and the university with scholars, students, and pupils. The same systems of grammar, oratory, and philosophy will be taught in every part of the State, and the literary features of Pennsylvania will thus designate one great and enlightened family.

"But how shall we bear the expense of these literary institutions? I answer, these institutions will lessen our taxes. They will enlighten us in the great business of finance; they will teach us all the modern improvements and advantages of inland navigation. They will defend us from hasty and expensive experiment in government, by unfolding to us the experience and folly of past ages, and thus, instead of adding to our taxes and debts, they will furnish us with the true secret of lessening and discharging both of them. * * * Every member of the community is interested in the propagation of virtue and knowledge in the State. But I will go further and add, it will be true economy in individuals to support public schools. * * * I conceive the education of our youth in this country to be peculiarly necessary in Pennsylvania, where our citizens are composed of the natives of so many different Kingdoms in Europe. Our schools of learning, by producing one general and uniform system of education, will render the mass of the people more homogeneous, and thereby fit them more easily for uniform and peaceable government. * * *

"The only foundation for a useful education in a republic is to be laid in religion. Without this there can be no virtue, and without virtue there can be no liberty, and liberty is the object and life of all republican governments. * * * Our country includes family, friends, and property, and should be preferred to them all. Let our pupil be taught that he does not belong to himself, but that he is public property. Let him be taught to love his family, but let him be taught at the same time that he must forsake and even forget them when the welfare of his country requires it. He must watch for the State as if its liberties depended upon his vigilance alone, but he must do this in such a manner as not to defraud his creditors or neglect his family. * * *

"To assist in rendering religions, moral, and political instruction more effectual upon the minds of our youth it will be necessary to subject their bodies to physical discipline."

Who can now estimate the consequences of the rejection of these wise and patriotic plans for the education of the whole people presented to Virginia and Pennsylvania, the two most populous and influential American states in the opening decade of the Republic, by Thomas Jefferson and Benjamin Rush? Had the ruling class of people in these States honestly adopted and wisely organized and administered this system of public training for American citizenship, their powerful influence at the center of the nation might have prevented the country from drifting through the contentions of seventy-five years into the horrors of a great civil war. One century of effective popular education would have so enlightened the masses of the American people that slavery would have been abolished by some action of the General Government satisfactory to all parties, and American history would have vindicated the prophecies and expectations of the great fathers of the Republic.

NORTH CAROLINA.

The first Southern States which moved in the constitutional recognition of education were North Carolina and Georgia.

North Carolina, with a population of 288,000, in 1776, at the beginning of the Revolution, placed in her constitution the following clause:

"ART. 41. That a school or schools shall be established by the legislature for the convenient instruction of youth, with such salaries to the masters paid by the public as may enable them to instruct at low prices; and all useful learning shall be duly encouraged and promoted in one or more universities."

This was followed by the establishment of the University of North Carolina, in 1789. The State moved with a commendable degree of activity in chartering "seminaries of learning;" Liberty Hall, at Charlotte, being one of the first fruits of State independence.

TENNESSEE.

Tennessee, the first child of North Carolina, was, until 1790, subject to the constitution and laws of the mother State. In 1796 it was admitted to the Union, with a population of 36,000. The original constitution of Tennessee contained no distinct provision for education, although the following reference is found in the constitution of 1796:

Art. I, Sec. 12. No member of the General Assembly shall be eligible to any office or place of trust, except to the office of a justice of the peace, or a trustee of any literary institution, where the power of appointment to such office or place of trust is vested in their own body.

DELAWARE.

Delaware was the first State to adopt the Federal Constitution in 1787, and in 1790 had a population of 60,000. Its constitution in 1792 provided that "the legislature shall, as soon as conveniently may be, provide by law * * * for establishing schools and promoting arts and sciences." But while an act in 1796 proposed "to create a fund sufficient to establish schools," and while this was followed by a series of legislative provisions that ordered the founding and support of schools "for poor children" and "free schools," yet it is only within a few years that this State compelled its people to the duty of local taxation, without which constitutions and statutes are powerless to teach the children. But at an early period the chief city of Delaware, Wilmington, established its present system of public education.

GEORGIA.

The State of Georgia in 1790 contained a population of 82,500, 2,900 of whom were negro slaves. In its constitution of 1777 it asserted that "schools shall be erected in each county, and supported at the general expense of the State," with the power to make liberal appropriations for seminaries of learning. In 1783 the legislature gave 1,000 acres of land to each county for the support of free schools, and in the year following 40,000 acres for the endowment of an academy in each city. The University of Georgia was chartered in 1785. One of the original provisions connected with this establishment was a law that every youth under the age of 16 sent abroad to be educated for three years shall be regarded an alien and deprived of the right to hold any public office in the Commonwealth.

The State at once set about establishing a group of academies, several of which became celebrated in their day, and remain as the secondary department of the present common-school system in the older cities. Of these are the academy of Richmond County, at Augusta, and Chatham Academy, at Savannah. By 1798 six of these seminaries had been established. Thus at an early period the State entered upon its favorite practice of chartering academies of all degrees of efficiency, chiefly denominational.

The head and front of this early system of academical education in Georgia was the famous Sunbury Academy, located in Liberty County, the seat of the original New England immigration of which we have already given an account. In 1788 it was founded by the confiscation of the property of Tories in the country, \$5,000 of which was used to erect the first building. In 1793 Rev. William McWhir, a Presbyterian clergyman, educated at Belfast, Ireland, after a service of ten years at Alexandria, Va., came to Georgia, and for thirty years was the principal of this institution. A historian of Georgia remarks: "This teacher did more than all others to establish a standard of scholarship and habits of study and discipline unusual in that period and among those people." Great numbers of the superior youth of the State owed their schooling to this seminary, and until the civil war the fame of Liberty County, Ga., as a nursery for clergymen, teachers, and men of science was bright, especially through the Gulf region of the South.

In 1783 the establishment of a free school in the town of Washington was the result of a legislative gift of 1,000 acres of land for such an institution in all the counties of the State.

In 1798 the State incorporated in its constitution the following provision :

"The arts and sciences shall be promoted in one or more seminaries of learning ; and the legislature shall, as soon as conveniently may be, give such further donations and privileges to those already established as may be necessary to secure the objects of their institution ; and it shall be the duty of the general assembly, at their next session, to provide effectual measures for the improvement and permanent security of the funds and endowment of such institutions."

In Georgia, as in Pennsylvania, the experiment was attempted of establishing a scheme of education for the children of the white poor. It failed, as it was fore-ordained to failure, by the very conditions of American society in every Southern State. Meanwhile the well-to-do people of the better sort, in conformity with the original English method adopted in the Southern States, educated their children in private or denominational seminaries, which, with all their deficiencies, did furnish a fair amount of education and largely contributed to that reputation for industrial enterprise and executive ability which long ago gave to Georgia the proud title, "Empire State of the South."

KENTUCKY.

Beyond the mountains old Virginia had already entered upon that wonderful career of colonization which has made her not only the "Mother of Presidents" but the fruitful mother of States. The western territory, now the great State of Kentucky, was occupied as early as 1775 by a movement of vigorous and adventurous people, largely from the southwestern portion of Virginia. During the war of the Revolution the new territory was the headquarters of the military operations by which the British power that still guarded the back door of the future Republic, the entire country from the Alleghanies to the Mississippi, was held at bay, crippled, and finally destroyed, while Washington, commanding the soldiery of the eastern provinces, was defending the great front door of the new America, facing the nations of the world.

But at the close of the war a further immigration of men of large native ability, with an appreciation of the value of popular education far above the average eastern Virginia planter, brought forward the subject of public instruction. Private schools had already been established by the early settlers, and schools whose reputation has survived to the present day were founded by private associations, societies, and the different churches.

But in 1780 the legislature, under the lead of Col. John Todd, appropriated certain lands in Kentucky, confiscated from British subjects, as a foundation for a university in that territory. Twenty thousand acres were thus appropriated and released from public taxation. The teachers in the school were exempted from military duty. The board of trustees included many of the foremost men of the coming Commonwealth. The preamble of the law of Virginia founding the Transylvania Seminary reads thus :

"It is to the interest of the Commonwealth always to encourage and promote every design which may tend to the improvement of the mind and the diffusion of useful knowledge, even among the most remote citizens, where situation in a barbarous neighborhood and a savage intercourse might otherwise render them unfriendly to science."

Under this leadership an academy was established in Lincoln County in 1785, with James Mitchell as principal, at a yearly salary of \$100. In 1789 the school was removed to Lexington, and in 1793 was furnished with grounds and a two-story brick building by local subscription. Thus was established the famous Transylvania University, at which through the early years of Kentucky many of the most

celebrated men of the State were educated, and which, after a stormy history of a hundred years, seems at last fully established as a flourishing institution of the higher order under the auspices of the Christian denomination.

There is no recognition of education in the early constitution of Kentucky, and although the State continued to donate generous gifts of land and money to institutions of learning, and schools for elementary instruction were established by churches and private enterprise, it was many years before the common-school idea of Jefferson had scaled the great mountain barrier that separated the original thirteen States from the new Southwest, which, together with Tennessee and Kentucky, now has spread itself toward the far-off shores of the Pacific Ocean.

MARYLAND AND SOUTH CAROLINA.

The States of Maryland and South Carolina, during the memorable twenty-five years that followed the breaking out of the war of Independence, made no demonstration in behalf of universal education that demands attention in this connection.

In the year 1800 Maryland had a white population of 247,000 and 125,000 negroes; total, 372,000. South Carolina contained 196,000 white and 150,000 colored people; total, 346,000. Neither of these States placed in its earlier constitutions, both formed in 1776, any recognition of education. Indeed, it was not till the close of the civil war, 1864, that the present elaborate provision was made a part of the fundamental law of Maryland, under which a system of public instruction for both races has been maintained for nearly thirty years.

But indirectly both these States deserve "honorable mention" in the great struggle in the Continental and Confederation Congress that ended with the cession of the entire northwest, between the present landmarks of West Virginia and the Ohio and Mississippi rivers, first to the Congress representing the thirteen confederated States and afterwards to the National Government, and in the subsequent dedication of a vast public domain to the education of the whole people west of the Alleghenies.

In the year 1777, at the darkest period of the struggle for Independence, on the proposal of a clause in the Articles of Confederation providing that the cost of the war should be defrayed out of "a common treasury supplied by the several States," the State of Maryland introduced a proposition fraught with the most far-reaching consequences not only to the general welfare but to the establishment of the American common school as the permanent system of universal education for the future Republic. This proposition reads as follows: "The United States in Congress assembled shall have the sole and exclusive right and power to ascertain and fix the western boundary of such States as claimed to the Mississippi or South Sea, and lay out the land beyond the boundary so ascertained into separate and independent States, from time to time, as the numbers and circumstances of the people thereof may require."

Even before this, at the Albany Congress in 1754, the original movement for colonial unity, called and greatly influenced by Benjamin Franklin, the same idea had taken form in a proposition that the boundaries of all the present colonies should terminate at the Appalachian Mountains, and the vast wilderness beyond should be open to settlement by "colonies of His Majesty's Protestant subjects."

But to the State of Maryland, which had no personal claim to this unoccupied territory, belongs the honor of presenting this issue in the above-mentioned proposition at the formation of the Confederation, and of standing by it, as the sole condition of her entrance into this league, until by other methods than she proposed, but with even more efficacy, the United States came in absolute possession of the "old Northwest," including the great States of Ohio, Indiana, Illinois, Michigan, Wisconsin, and a portion of Minnesota.

It is not essential to this essay to trace this long and deeply interesting discussion in Congress which, after eight years, resulted in the famous land ordinance of 1785. The most complete account of this is found in the valuable history of the "Old

Northwest," by Dr. B. A. Hinsdale, professor in the University of Michigan, and the essay on the action of Maryland, by Prof. H. B. Adams, of Johns Hopkins University, Baltimore. Enough to say that by this momentous act the original group of thirteen colonies, up to that time loosely held together by a common cause in the struggle for independence, liable to be hurled off into a common ruin by the perils of the war, found themselves bound together by the common possession of a public domain as extensive as the present Empire of Germany or the Republic of France. The most reliable of American historians do not hesitate to say that here stepped to the front, out of the confusion of colonial contention, the great central idea of American nationality that was only established, beyond question, by the result of the civil war in 1865. For out of this came the establishment of the original Confederation of the thirteen States, and thence the formation of the National Government.

The land ordinance of 1785 first introduced three of the most important factors in the development of this immense wilderness into the majestic group of Commonwealths that now stretch from the Alleghanies to the Northern Pacific Ocean.

(1.) This entire territory should be divided into townships of 1 square mile, 360 acres, each. This was the transfer of the New England township system of land division, so lauded by Thomas Jefferson, who desired to introduce it, too late for success, into Virginia at the foundation of the State government.

(2.) The establishment of a system of accurate land surveys and the settlement of the whole country according to the surveyor's rod and line. When we consider the indescribable evils that have come out of the old-time careless and fraudulent methods of dividing the landed possessions of the original emigrants beyond the Alleghanies, we can appreciate the declaration of Daniel Webster, that "in transferring her own system of land surveys to the Northwest, New England conferred a boon on the nation that entitled her to perpetual remembrance."

(3) But the third feature of this ordinance, without which no system of land division would have secured this splendid patrimony and the Union from future perils impossible then to estimate, was the dedication of the sixteenth section of each township for the support of public schools, which has well been characterized as "a far-reaching act of statesmanship that is of perpetual interest." For then the American common school which, even in its formative state, existed only east of the Hudson River, was lifted up into national proportions and therefore assured the opportunity "to have free course, run and be glorified" in every community of the American Republic through all time to come.

It is an impressive commentary on the fact that by no one section of the Union can be claimed the sole honor of the final adoption of any essential feature of our present American society that, while New England did first commence and establish for her own especial use the American common school, it is also true that the original idea of New England was local and limited, and to the great Middle and Southern States must we look for that broad idea of extension of territory which has given to the Republic its present amplitude of dimension. To Maryland, therefore, belongs the honor, in the Congress of the colonies, of insisting on that common possession of the old Northwest, whose logical effect was the accession of Louisiana and our Pacific possessions. And we shall see hereafter that the same State vainly protested against the policy which so long denied to the old Atlantic States a participation in this original educational land grant, an injustice which as yet has been only partially corrected by the recent dedication of great landed properties on condition of their application for agricultural and mechanical colleges, in all the States of the Union.

SOUTH CAROLINA.

South Carolina may also claim due honor, not only as to her own representation, but as the representative of the entire South below Virginia, through the action of her member, Mr. Kane, her delegate on the committee in the Congress of the Confed-

eration, whereby the great ordinance of 1787 for the government of the Northwest was established. This ordinance was not only the corner stone of the civilization of the old Northwest, but the prophesy of the revised Constitution of the United States, in virtue of its absolute prohibition of slavery and its idea of perpetual national aid to universal education.

Thus, at the formation of the Republic, every State was providentially pledged, through the leadership of its foremost men, responding to the common inspiration of its foremost people, to perpetual fidelity to the germ of nationality which required yet a full century for its complete development, and will demand another century for the revelation of its ultimate destiny as the central and directing power of the higher ideal of the Republic which is to be.

VIRGINIA.

But, of all colonial movements in the direction of universal education during this formative period of American affairs, the precedence must be given to the work of Thomas Jefferson and the group of his eminent associates, in behalf of the establishment of a complete system of public instruction for the State of Virginia. The beginnings of important events which ripen at once into success in the life of a Commonwealth are often less worthy the notice of the historian than the lessons of the profound statesmanship which glance along the coming years and proposes far beyond what the people are yet ready to adopt.

Such was the history of the great movement in behalf of public education, inaugurated in Virginia by Thomas Jefferson in 1779. No plan for the training of American youth for American citizenship, all things considered, more complete, better thought out, and more wisely adjusted to the growing needs of a new republic, has been given to the country. Its only defect was its failure to appreciate the condition of the ruling planter class of the State, on whose approbation and hearty support the success of any scheme of education depended. Within the short space of twenty years this great opportunity was offered to the Old Dominion, fiercely debated, and enacted as law on the statute book in a shape intended to insure its partial defeat. But this was only the preliminary skirmish of a conflict which, from that day on, was always breaking out afresh in the State and gathering new heart from every defeat until, at the close of the civil war, in 1870 Virginia at last established a system of public instruction including every feature of Jefferson's scheme rejected almost a hundred years before.

It could be devoutly wished that the materials were at hand to trace the formation of this remarkable system in the mind of the great educational statesman of the South from its earliest conception until its appearance, full formed, in the legislature of 1779, in the thirty-sixth year of its author's life. Something must be ascribed to his birth and early training previous to his appearance at the College of William and Mary at the age of 17. Thomas Jefferson was born in 1743. His parental ancestor had come to Virginia from Wales before the sailing of the *Mayflower*. The family, of the "middle class," attracted no attention till the advent of Peter, the father of Thomas, who, in 1738, became a considerable landholder on the western border land of the colony and married one of the Randolphs. It has been remarked by a recent biographer of Jefferson that "neither Washington, Jefferson, nor Madison, until they became distinguished, would have been entitled to take rank in the exclusive coterie of the old Virginia families." But evidently Madam Peter was disposed to push her own social claims for all they were worth. Born in the Shadwell Parish of London, in the somewhat equivocal language of her great son, "her family traced their pedigree far back in England and Scotland, to which let everyone ascribe the faith and merit he chooses."

His father's plantation was out on the western border land of the seacoast and James River country that called itself Virginia at that day, with headquarters at Williamsburg, as the birthplace of Washington was on the opposite border, away in

the northeast. But no such opportunity for social education was afforded to Jefferson as to his greater contemporary, who lived alongside and studied with all his might a fine "object lesson" of British high life in the colonies in the great establishment of Lord Fairfax on the Potomac. Jefferson's father cultivated a big farm of 1,500 acres, including the future Monticello and the grounds of the University of Virginia. He was a Virginia militia colonel, a member of the house of burgesses, and, at his death, a rising man in the colony. He died at 50, leaving Thomas, a boy of 14, a student at some little Virginia county temple of the classics, with the means of obtaining an education at William and Mary and afterwards establishing himself among his own people.

Thomas first appears to us in college at the age of 17, where he studied diligently and graduated. During these years he must have been a close observer of the condition of the different classes of people, especially in the border region where he lived. He had doubtless thought long and seriously on such matters as the union of church and state, the existence of primogeniture and family entailment of estates, and other features of the existing order of society against which the masses of the people were already chafing with ominous threatenings of revolt. The rapid growth of negro slavery in the colony, the negro element immediately after the Revolution being three-sevenths of the entire population, could not fail to weigh on his mind and heart. And below all these institutions that faced outward toward far-off Europe yawned the deep abyss under the foundations of society itself, the fearful slough of the colonial illiteracy, into which he never looked till the day of his death without a shudder.

From such a youth, solemnized by deeply brooding thought and ripened by the great family affliction, he was transferred to the heart of the colonial aristocratic life, the little capital city of Williamsburg. With only 1,000 people of all sorts, with a group of Government and educational buildings, environed by a straggling village in an all-outdoors surrounding country, it was still the center of the political, social, and educational life of the proudest old colony on the continent.

Here at once he found his "fate" in the person of his professor of mathematics and philosophy, William Small, who, in the words of his pupil, "probably fixed the destinies of my life." He says: "I had the incessant wish that I should even become what they (Dr. Small, George Wythe, and Peyton Randolph) were. Under temptations and difficulties I would ask myself, What would Dr. Small, Mr. Wythe, and Peyton Randolph do in this situation? What course in it will insure me their approbation?" Dr. Small afterwards returned to Scotland, and there was of great service to James Watt in the crisis of his long struggle to bring the steam engine out from the realm of theory to the mighty agency of human civilization it has now become. Through his energetic influence the disheartened inventor was set once more on his financial legs. Dr. Small died just after Watt had made his first successful steam engine, and one of his last acts was the drawing up of a petition to Parliament in behalf of the invention. His introduction to the financial friend of Watt by Benjamin Franklin was another coincidence in the life of that most versatile educator of the American people before the establishment of the national life.

Beside Dr. Small, the foremost representative of good learning in the college, young Jefferson was also the close friend of George Wythe, father of the Virginia bar and instructor of John Marshall. He also appears to have been an intimate associate of Governor Francis Fauquier, who represented well the most attractive side of high life across the water. In such a notable inner circle all things pertaining to the welfare of the Commonwealth, no less than the more profound concerns of religion, morality, and education would be gone over, at the instance of one so restless, radical, and mature as the youthful student. The legislature of Virginia was already in the throes of the early conflict with the mother country.

In one respect young Jefferson did not avail himself of his college opportunities, even such as they were. He seems from the first, and through life, to have con-

ceived a dislike, ranging closely on disgust, for all metaphysical and ethical speculations pertaining to the human side of philosophy. Our modern educators, who draw their elaborate systems from the rival schools of ancient and modern philosophy, will be somewhat at a loss to understand how, under this great disadvantage, Jefferson managed to get on paper a practical system of education so well adjusted to the needs of all classes of the people of his State that it has survived the indifference, hostility, and active resistance of a century, and to-day appears virtually as conceived by its author in the organized system of public instruction in Virginia.

At the completion of his college career and of his law studies under Wythe he returned to his native county, married in 1772 the daughter of a wealthy lawyer, at whose death in 1774 he found himself possessed of an estate of 5,000 acres, with 52 slaves and an income, large for that time and country, of \$5,000 per annum. The seven years of his active professional life, from 1767 to 1774, had brought an unusual success, though Jefferson was never esteemed a great lawyer or advocate. He had the old Virginia worship for land and the life of a planter, and always half regarded the growth of manufactures and cities as hostile to the Republic.

In 1765, standing in the doorway of the house of burgesses at Williamsburg, Jefferson had listened, entranced, to the famous patriotic speech of his old associate and friend, Patrick Henry; and, in 1769, became a member of the same legislative body at the age of 26. During the next seven years he was swept along by the mighty current of events, and in 1776, after the great distinction of the authorship of the Declaration of Independence, declined a further seat in the Continental Congress and returned to his native State as a member of the legislature. Here he was to lead in the great work of the transformation of the old colonial Dominion into the new Commonwealth of Virginia, which, for a long generation, stood before the world as the "Mother of Presidents" and, in greater degree than any other, the director of the public policy of the United States of America.

Here, first, does Jefferson appear in the position of a full-grown advocate of universal education. There were, however, many barriers to be surmounted before this, the citadel of the old order, could be stormed. A complete system of courts was to be established. The colonial system of entail of property was next assailed, and, under the assault of this radical young leader of the people, went down in a day, carrying with it the only "aristocracy" of the old British sort that ever existed in America. Primogeniture followed in the sweep of this destructive legislation. Last of all, the union between state and church, so fruitful of evil through the entire life of the colony, and in its later years a perpetual irritation to the rapidly increasing body of dissenters, went by the board in 1786, when the bill for establishing religious freedom was finally passed. This remarkable body of legislation wrought a change almost as great in the social order and public life of the State as the subsequent abolition of slavery at the close of the civil war, a hundred years later. The transfer of the seat of government from Williamsburg to Richmond sealed the fate of the old colonial capital, and the proud new Commonwealth began its existence as a "city set on a hill." This important legislation was inaugurated and most of it completed during the two years of Jefferson's membership of the house of delegates. It was, in itself, a record of progressive statesmanship which, in connection with his more prominent service as author of the Declaration of Independence and member of the Colonial Congress, has been granted by Providence to no other man in our country at the age of 36.

But while the great theoretical philosopher of American democracy had already laid the foundations of his future eminence in state and national affairs in the heart of the masses of the people, he had waked up in his own State an implacable, hostile party among the section of the landed, social, and ecclesiastical aristocracy that had been so ruthlessly despoiled of time-honored prerogatives. It was easy enough, in the triumphal progress which the remaining thirty years of his public life became, to scout at and despise this relentless opposition party at home. But it had its

revenge in postponing for almost a century the final and greatest victory of Jefferson's twin policy of freedom and education, and embittered his closing years of pecuniary embarrassment at Monticello with the greatest sorrow of his life, the failure of his scheme of universal education.

This plan, as it lay in the mind and was afterwards outlined in the words of its author, was a comprehensive scheme, including the abolition of negro slavery and the industrial training of the young freedmen for their future, either at home or colonized in Africa. While this feature did not appear in the original bill, presented in 1779 to the legislature for the education of the people, an amendment to a digest of existing laws relating to the slave code was withheld, to be presented at the fit time. This statute, the joint work of Wythe, who emancipated his own slaves, and Jefferson, who did not, contemplated the freedom of all negroes born of slave parents after the passage of the act, and their residence with their parents till the age of 18 for females and 21 for males, during which they should be instructed, at public expense, in a manner somewhat similar to the present system at the Hampton (Va.) Normal and Industrial Institute. They might then be colonized as a "free and independent people," under the protection of the National Government, while a white immigration was to be invited from abroad to fill the industrial gap caused by their exportation.

But here the defeated class threw up its strong line of defense, only to be battered down by the cannon of the Republic in 1865. This was emphatically a home question, touching the most vital interest of every planter in Virginia, implying his complete transformation to a New York or New England farmer, with all the intolerable consequences the relentless logic of that change implied. It was in vain that Marshall and Washington and the majority of the greatest minds of that period were at heart, and after a sort in public, favorable to the policy. It was already too late to assail an institution so thoroughly rooted in the habits of the people that only a social and political revolution could tear it out of its place. It was proposed, among other theories of the day, that the public lands of the nation should be utilized to bear the great burden of this change. But all that was then accomplished was the prohibition of the foreign slave trade by the Virginia legislature in 1788, the year before its prospective abolition after 1808 by the clause in the Constitution of the United States.

But another barrier to the complete emancipation of Virginia from the shackles of colonial dependence on a prolongation of the aristocratic element of British society remained to be surmounted, the peril of illiteracy in the lower strata of the superior race.

In 1782 Jefferson wrote his famous book, *Notes on the State of Virginia*, for the edification of M. de Marbois, secretary of the French legation to the United States. In that most attractive volume, declared "a classic" by Humboldt, he argues with prophetic wisdom against an undue encouragement of immigration from Europe. He takes the ground that in a new country, just embarked in the experiment of a government founded upon the most advanced principles of the British constitution, reinforced by elements drawn from a broad view of the nature of man, it would be a dangerous experiment to mix with the present population a large number of people reared in Old World ideas, and who would either adhere to the political views in which they were educated or react into the wildest excesses of unbridled freedom. He estimates that according to the present rate of increase the 567,614 people then in the State, including West Virginia, by the year 1862 would reach the number of 4,540,912, a population greater than the natural resources of the Commonwealth could support, unless the cost of living could be materially reduced. He also indulges the hope that by the State prohibition of the slave trade the 270,000 negro slaves, at that time nearly one-half of the whole people and increasing faster than the whites, will decrease. "This will in some measure stop the increase of this great political and moral evil while the minds of our citizens may be ripening for a complete emancipation of human nature."

Already, in the legislature of 1779, had Jefferson introduced his scheme of universal education, accompanied with an amendment for the gradual emancipation, fit training, and subsequent exportation of the slave population, at public expense. In a chapter of his notes on Virginia he outlines the main features of the plan of education for the white children and youth of the State. This we here reproduce, as the best sketch of the author's ideas, with his plan for its incorporation into the educational and social life of the Commonwealth.

Under "Query 14," pages 216-221, Fourth American Edition, Notes on Virginia, we read: "Another object of the revisal is, to diffuse knowledge more generally through the mass of the people. This bill proposes to lay off every county into small districts of 5 or 6 miles square, called hundreds, and in each of them to establish a school for teaching reading, writing, and arithmetic. The tutor to be supported by the hundred and every person in it entitled to send their children three years gratis and as much longer as they please, paying for it. These schools to be under a visitor who is annually to chuse the boy, of best genius in the school, of those whose parents are too poor to give them further education, and to send him forward to one of the grammar schools, of which twenty are proposed to be erected in different parts of the country, for teaching Greek, Latin, geography, and the higher branches of numerical arithmetic. Of the boys thus sent in one year, trial is to be made at the grammar schools 1 or 2 years, and the best genius of the whole selected, and continued 6 years, and the residue dismissed. By this means 20 of the best geniuses will be raked from the rubbish annually, and be instructed, at the public expense, so far as the grammar schools go. At the end of 6 years instruction, one half are to be discontinued (from among whom the grammar schools will probably be supplied with future masters;) and the other half, who are to be chosen for the superiority of their parts and disposition, are to be sent and continued three years in the study of such sciences as they shall chuse, at William and Mary college, the plan of which is proposed to be enlarged, as will be hereafter explained, and extended to all the useful sciences. The ultimate result of the whole scheme of education would be the teaching all the children of the state reading, writing, and common arithmetic: turning out 10 annually of superior genius, well taught in Greek, Latin, geography, and the higher branches of arithmetic: turning out 10 others annually, of still superior parts, who, to those branches of learning, shall have added such of the sciences as their genius shall have led them to; the furnishing to the wealthier part of the people convenient schools, at which their children may be educated at their own expense.

"The general objects of this law are to provide an education adapted to the years, to the capacity, and the condition of every one, and directed to their freedom and happiness. Specific details were not proper for the law. These must be the business of the visitors entrusted with its execution. The first stage of this education being the schools of the hundreds wherein the great mass of the people will receive their instruction, the principal foundations of future order will be laid here. Instead therefore of putting the Bible and Testament into the hands of the children at an age when their judgments are not sufficiently matured for religious inquiries, their memories may here be stored with the most useful facts from Grecian, Roman, European and American history. The first elements of morality too may be instilled into their minds; such as, when further developed as their judgments advance in strength, may teach them how to work out their own greatest happiness, by shewing them that it does not depend on the condition of life in which chance has placed them, but is always the result of a good conscience, good health, occupation, and freedom in all just pursuits.

"Those whom either the wealth of their parents or the adoption of the state shall destine to higher degrees of learning, will go on to the grammar schools, which constitute the next stage, there to be instructed in the languages. The learning Greek and Latin, I am told, is going into disuse in Europe. I know not what their manners and occupations may call for: but it would be very ill-judged in us to follow

their example in this instance. There is a certain period of life, say from 8 to 15 or 16 years of age, when the mind like the body is not yet firm enough for laborious and close operations. If applied to such, it falls an early victim to premature exertion: exhibiting indeed at first, in these young and tender subjects, the flattering appearance of their being men while they are yet children, but ending in reducing them to be children when they should be men. The memory is then most susceptible and tenacious of impressions; and the learning of languages being chiefly a work of memory, it seems precisely fitted to the powers of this period, which is long enough too for acquiring the most useful languages ancient and modern. I do not pretend that language is science. It is only an instrument for the attainment of science. But that time is not lost which is employed in providing tools for future operations: more especially as in this case the books put into the hands of the youth for this purpose may be such as will at the same time impress their minds with useful facts and good principles. If this period be suffered to pass in idleness, the mind becomes lethargic and impotent, as would the body it inhabits if unexercised during the same time. The sympathy between body and mind during their rise, progress and decline, is too strict and obvious to endanger our being misled while we reason from the one to the other.

"As soon as they are of sufficient age, it is supposed they will be sent on from the grammar schools to the university, which constitutes our third and last stage, there to study those sciences which may be adapted to their views. By that part of our plan which proscribes the selection of the youths of genius from among the classes of the poor, we hope to avail the state of those talents which nature has sown as liberally among the poor as the rich, but which perish without use, if not sought for and cultivated. But of the views of this law none is more important, none more legitimate, than that of rendering the people safe, as they are the ultimate guardians of their own liberty. For this purpose the reading in the first stage, where they will receive their whole education, is proposed, as has been said, to be chiefly historical. History by apprising them of the past will enable them to judge of the future; it will avail them of the experience of other times and other nations; it will qualify them as judges of the actions and designs of men; it will enable them to know ambition under every disguise it may assume; and knowing it, to defeat its views. In every government on earth is some trace of human weakness, some germ of corruption and degeneracy, which cunning will discover, and wickedness inaccessibly open, cultivate and improve. Every government degenerates when trusted to the rulers of the people alone. The people themselves then are its only safe depositories. And to render them safe their minds must be improved to a certain degree. This indeed is not all that is necessary, though it be essentially necessary. An amendment of our constitution must here come in aid of the public education. The influence over government must be shared among all the people. If every individual which composes their mass participates of the ultimate authority, the government will be safe; because the corrupting the whole mass will exceed any private resources of wealth: and public ones cannot be provided but by levies on the people. In this case every man would have to pay his own price. The government of Great Britain has been corrupted, because but 1 man in 10 has a right to vote for members of parliament. The sellers of the government therefore get nine tenths of their price clear. It has been thought that corruption is restrained by confining the right of suffrage to a few of the wealthier of the people: but it would be more effectually restrained by an extension of that right to such numbers as would bid defiance to the means of corruption.

"Lastly, it is proposed, by a bill in this revision, to begin a public library and gallery, by laying out a certain sum annually in books, paintings, and statues."

This idea and plan was adhered to by Jefferson with an almost desperate tenacity to the end of his life. In 1821 he wrote to his fast friend and, from the first, collaborer in the good cause, Joseph Cabell, on his proposition to retire from public life:

"I know well your devotion to your country and your foresight of the awful scenes

coming on her, sooner or later. With this foresight what service can we ever render her equal to this? * * * Health, time, labor—on what, in the single life which nature has given us, can these be better bestowed than on this immortal boon to our country? The exertions and the mortifications are temporary; the benefit eternal. * * * I will die in the last ditch, and so I hope you will, my friend. * * * Nature will not give you a second life wherein to atone for the omissions of this. * * * Do not think of deserting us, but view the sacrifices that seem to stand in your way as the lesser duties and such as ought to be postponed to this the greatest of all. Continue with us in these holy labors until, having seen their accomplishment, we may say, with old Simeon, *‘Nunc dimittis, Domine.’*”

At this time there was little hope that anything below the apex of the solid pyramid of legislation for popular education could be secured. But with all the humiliating revelations of the forty years of conflict with the relentless enemies of universal education in Virginia, the faith of Jefferson soared above the submission to defeat, and he wrote to John Adams, in 1823: “You and I shall look down from another world on these glorious achievements to man, which will add to the joys even of Heaven.”

In the first flush of enthusiastic philosophic and patriotic contemplation of the possible advantages of universal education Jefferson anticipated all that has been achieved and is actually in operation to-day in his own and every State in the Union. Julius Melbourne, an educated and worthy colored man, whose *Life and Opinions*, published in 1847, read like a romance, reports a conversation at a dinner at Monticello, in 1815, in company with Chief Justice Marshall, William Wirt, Samuel Dexter, of Boston, and Dr. Samuel L. Mitchell, of New York, in which the retired statesman gives full expression, not only to his well-known opinions on the institution of slavery, but argues with great cogency against the scientific theory of the natural inferiority of the negro race broached by the New York doctor. He stated also that “he intended the University of Virginia should be for the instruction of all *sects and colors*,” and experienced deep anxiety for the improvement of the minds of “our colored brethren.”

Many of the statesmen of the Revolutionary epoch and the following generation were more distinguished for executive faculty in public affairs than Jefferson. It is doubtful if, in the functions of the practical statesman, he was equal to Washington, who, under his majestic exterior and impressive habit of reticence, was the most astute manager of men in the early days of the Republic. But, certainly, in the marvelous appreciation of and sympathy with the progressive element of human nature among “all sorts and conditions of men,” with an undying faith in the final triumph of human nature over all its enemies, including its own weakness and sin, and in a forward-looking prophetic view of the career of the American people, his genius was almost supreme. And in no respect was this genius so profound and prophetic as in his ideals and plans for the education of the American people. In his character as a politico-philosophic educator he was so far in advance of his own time that the educational public of no part of the Union has caught up with the full comprehension of what he proposed. The great work on popular education compiled from “the correspondence of Jefferson and Cabell” has been permitted to fall out of print, and the record of the educational services of the great statesman to his own State and the nation is practically a blank to nine-tenths of the students in the universities and colleges of all the United States.

The story of the reception of Jefferson's original plan for the organization of education in Virginia in 1779 is soon told. Even he, with his intimate knowledge of the people of Virginia, did not realize that this was the home thrust in the duel between “the classes and the masses” which would have “finished the course” of the great consolidated order of society into which the colony had solidified during the experience of two hundred years. With negro slavery established as an unalterable feature of its industrial system, with the old British method of educating the higher

class for governing, with the masses left to the claim of charity and the whim of an absolute State for even the crumbs that fell from the table of knowledge, that side of Virginia might well hold itself quite impregnable, with no fear of defeat save in an almost impossible revolution. The regulation planter had no idea of taxing himself to school his poor neighbor's children or the family of the energetic farmer in the vast northern and western sections of the State. He fought through forty years, with an obstinacy that almost broke the heart of the great statesman, to prevent the establishment of the University of Virginia as a "new departure," pledging the allegiance of the State to the higher education, and when conquered by its final establishment after the death of Jefferson, captured the institution and worked it in the interest of his class until 1865.

But the most formidable opposition was found, as always, in the clerical party and that element of lay churchmen, even more irreconcilable than its educated leaders. Of course, the clerical and lay advocates of church privilege had no use for any system of education, high or low, that emancipated the mind of youth from the control of Christian education of the ultrasectarian sort. Neither could the clerical and lay leaders of the dissenting religious bodies intrust themselves to a State system of education, until the complete rupture of the Commonwealth from ecclesiastical domination should be assured. To this was added the absolute conviction of a powerful landed class and of a corresponding prejudice in the middle estate of a society thus organized, of the sole right and duty of the family, aided by the clergyman, to educate the child.

The College of William and Mary from the first opposed the educational scheme of its most distinguished son. And this long and bitter controversy between the contending parties, with the refusal of the corporation of William and Mary to accept the proposition of a removal to Richmond in connection with the establishment of the University of Virginia, was the most powerful cause of the gradual decline of this venerable institution. Happily, in these latter days, the wisdom of the original idea of Jefferson has prevailed, and the College of William and Mary is now enjoying a new life, in connection with its department of pedagogy, with a larger attendance of students than since its foundation.

For seventeen years, till 1796, the legislature seems to have been under the control of these adverse elements. Jefferson's plan for the emancipation of the slaves, which was an integral part of his original scheme, was never permitted to appear. And it was regarded a wise policy to ignore the demands of the rising class of people who stood behind Jefferson and many of the foremost men of the State in their desire for a practical system of graduated education, including all white youth and both sexes, and the dissemination of good literature among the people. But in 1796 a provisional act was passed by which a majority of the acting justices of each county could initiate a system of schools supported by public taxation. The evident weakness of such a law was seen and denounced at once by Jefferson. Of course the respectable judicial gentlemen of the old estate did not propose to burden their order with an imposition so odious as taxation for the schooling of other people's children. We can not perhaps severely condemn the state of public opinion in colonial Old Virginia a hundred years ago, for, under the guise of admitted obligation to the masses, Jefferson's school system simply announced a day of doom for the ancient order. Of course the law of 1796, as was the intention of its framers, fell dead; and the State waited another generation for an approach to the idea of educating the whole people of the foremost Commonwealth in the Union.

Some of our later historians of education have speculated on the consequences of this repudiation of the educational scheme of Jefferson by his own State at the beginning of the national life. It is suggested that, after all, the Old Dominion may well be satisfied with the glorious record of great men developed by the Revolution, and even the temporary splendor of a social order that was bound up with the persistent denial for a century of the fundamental right of human nature in a

Republic—the right of every child to a training for republican citizenship by the aid and under the protection of the Commonwealth. But neither Jefferson, nor Washington, nor Wythe, nor Marshall, nor Cabell, nor any other publicist of the first class, educated in the stern university of the old colonial life of Virginia, entertained this opinion. They all, with one accord, prophesied what did come to pass from the rejection of the scheme of general enlightenment offered at the opening life of the Commonwealth. The failure to realize the population of the State, as estimated by Jefferson, was not the least of these consequences. The increase between 1782 and 1862 did not amount to one-half this expectation, and of this increase the negro contingent was a full third. Meanwhile, the most valuable portion of the State remained only partially developed; its boundless resources in mines, timber, and water power for manufactures were largely neglected. The drifting away of multitudes of her most active and progressive young people, whose places were not supplied either by a reliable home or foreign class of immigrants, had, by 1862, built up several rival States out of its original domain. West Virginia seceded from old Virginia, for the Union, at the breaking out of the civil war, and is now growing into a powerful Commonwealth, having been estranged by the policy of the class that resisted Jefferson to the last.

As a natural consequence, the genius and progressive talent educated in the different schools of the Old Dominion was constantly attracted from home to more hopeful positions in the Northwest and Southwest. And it does not need that any member of that illustrious brotherhood of the fathers should rise from the dead to remind us that, had this scheme of universal education been honestly and heartily adopted by the people of Virginia at the founding of the Government of the United States, the entire South would have followed, and all the horrors seen in vision by the great prophetic fathers would have been averted. There would have been no more probability of such a result as the civil war of 1861-1865 in the South had the masses of the people been educated as in many of the States of the Union than that New England should have demanded independence to establish a constitutional monarchy and a landed aristocracy in response to the "English" yearnings of a class whose exclusive obscurity is their chief title to eminence. But so was it ordered. But we may all share to-day in that glowing anticipation of the great educator-statesman of Old Virginia, of "joy in Heaven" over the final adoption of his majestic ideal of republican society by his own beloved State.

THE NEW REPUBLIC AND EDUCATION.

But now all local and State agitation in behalf of the American common school is for the time merged in that supreme act of the American people, the grandest new departure of that age of great achievements—the passage of the ordinance of 1787 for the settlement of the Northwest Territory and the dedication of a vast public domain of the new nation to the sacred use of universal education in the States admitted to the Union thenceforth through all coming time.

Volumes have been written and controversies almost innumerable, like the swarms of flying things about the great electric light at a street corner, have raged about that master work of early American statesmanship—the ordinance for the government of the Northwest Territory, passed July 13, 1787, by the unanimous votes of the eight States then represented in the Congress of the Confederation assembled in New York, and confirmed in all its essential features among the earliest acts of the Congress of the United States, August 7, 1783. It is no part of this essay to give a detailed account of the long and involved negotiations between Congress and the several States concerning the disposal of the vast uninhabited wilderness beyond the mountains, into whose possession somebody had come by the happy termination of the war of independence. Suffice to say that, basing their claims on grounds more or less reliable, but mostly running back to the original grants of an imperial territory by a home government to successive colonies of Protestant immigrants,

six of these States represented in the Continental Congress supposed themselves the owners of immense tracts of unsettled country, extending from the Alleghenies to the Mississippi. At this period there were less than 4,000,000 people in the country, 98 per cent of whom were distributed along the Atlantic Coast and extending some 250 miles inland. The remaining 2 per cent or less were chiefly clustered in isolated settlements within the territory of what afterwards became the States of Kentucky and Tennessee. Massachusetts, Connecticut, New York, New Jersey, Pennsylvania, Virginia, and the Carolinas were the chief centers of population in what is now included in the fifteen great States between the Atlantic and the Mississippi. Beyond the Father of Waters, Spain was still the undisputed mistress of a territory more extensive than the entire area of the country wrested from Great Britain in the Revolutionary war.

The formation of the Government of the Confederation during the war hinged on the solution of the troublesome question, To whom should this vast unoccupied country belong? Virginia, always foremost in the councils of the time, claimed not only a present authority over Kentucky, but the entire region now occupied by the five States of Ohio, Indiana, Illinois, Michigan, Wisconsin, and a portion of Minnesota. The claims of Massachusetts, Connecticut, and New York overlapped and competed with this wholesale pretension. South of Kentucky the Carolinas and Georgia were encouraged to proffer their rights of eminent domain over all that is now included in Tennessee and portions of Alabama and Mississippi.

The State of Maryland, with no claim of her own, in behalf of other States in similar position, made the earliest and most persistent stand against the absorption of this domain by the six Commonwealths. After a long and embittered conflict, in which it seemed again and again that the hope even of a league so frail as the old Confederation would be wrecked, a reviving sense of patriotism brought in "an era of good feeling," and all the contending parties ceded their lands to the new Congress of the Confederation, to be disposed of for the common good by the creation, in due time, of new States.

But now came up the question, equally important and fraught with consequences to the future of the new Confederation impossible even now to estimate, What will the country do with its new imperial annex? It was not then so apparent as now, save to the few prophetic minds of the period, that this loose and jealous club of colonies had assumed a portentous obligation in coming in possession of a common property so vast that it created a common interest which in time would override all consideration of separate colonial or extreme State rights. A family that has been kept apart for years, or in a state of "armed neutrality," by the obstinate individuality of all its members, may well be appalled when it suddenly becomes the joint heir of a fortune of millions. Each member will think more than once before he persists in his own selfish interest to the hindrance of the founding of a great family. So, as the fortunes of the war varied, and as more than one colony might well bethink itself of its own fate in case of failure, the emerging of this great question, like the appearance of a new world first revealed from the western mount of vision, seems to have cooled the heated brains of wrangling statesmen and brought to the front the question of nationality as never before. For six years Congress was occupied, more or less, with the question of what to do, especially with a portion of this domain some 235,873 square miles in extent, a territory larger than any European nation save Russia, already believed to be one of the favored spots of the earth for the future occupation of man.

The first official proposition to Congress for an ordinance for the organization of the territory in question was made by a committee, of which Thomas Jefferson was chairman. It was quite unlike the final ordinance of 1787. But the fifth "article of compact," evidently the work of Jefferson, provided that after the year 1800 negro slavery in all the ten States to be carved out of the Northwest Territory should not exist. At that time slavery did exist through the entire extent of the

United States, save in Massachusetts, where it had been abolished by decision of the supreme court in 1780. The French settlers, the majority of the residents in these 265,878 square miles of wilderness, were slaveholders, and the adjacent Territories of Kentucky and Tennessee were already committed to this institution. The provision of Jefferson, while it bore new testimony to his lifelong disapproval of slavery, was another indication of the flexible political policy which was often the enigma of his long and celebrated career. For under this condition, by which the institution was to be tolerated during the fourteen years of territorial existence before 1800, it would have been practically impossible that it should not have been naturalized. As it was, before that date even the Territory of Ohio was greatly agitated by the efforts of the already alarmed slaveholders to repudiate the ordinance of 1787. Gen. William Henry Harrison, governor of the Territory and afterwards President of the United States, became the president of a great organization to break the compact, and Jefferson himself favored the toleration of slavery for a term of years. But in this, as in the previous collision with the real governing class of his own State, he found himself in advance of his time. The clause for freedom in his bill was defeated and the remaining portions of the ordinance, though passed, became a dead letter. Mr. Jefferson left Congress seventeen days after this action for a long residence as minister to France, and had no further direct concern with the forming of the fundamental law of this portion of the Northwest.

On February 16, 1785, Rufus King, of Massachusetts, prepared an article that went further than the original proposition of Jefferson. It prohibited slavery in all the States formed out of this territory, and made the provision an unalterable part of the compact between them and the thirteen original States. This provision slept the sleep of death in committee.

On April 26, 1787, a fourth proposition was reported to Congress, in a plan of government for this territory, which contained no reference to slavery, religion, education, civil rights, obligations of contracts, etc., and five days before the passage of the final ordinance of 1787 this was the only bill before the Congress of the Confederation in the city of New York.

At this juncture, as by one of those interpositions of Divine Providence in which the believers in such direction of American affairs have abounding faith, a "new departure" was taken in the entire attitude of Congress. On July 9 another committee, consisting of three Southern and two Northern members, was appointed; Carrington and Lee of Virginia, Kean of South Carolina, Nathan Dane of Massachusetts, and White of New York. Two days later this committee reported the bill, which, with the addition of the antislavery clause, accepted as an amendment offered by Nathan Dane on July 10, became the famous ordinance of 1787. On the 13th was passed this ordinance, which later, with the Constitution of the United States, gave to the present Republic its first existence and policy.

The accepted explanation of this sudden and momentous change of front and the unanimous consent of the Confederate States, represented by Massachusetts, New York, Virginia, and South Carolina, in its passage of this great charter of republican government, even before the formation of the National Union, is the appearance on the stage, at the opportune moment, of Dr. Manassah Cutler, a clergyman, scientist, statesman, and gentleman of remarkable personal accomplishments, from Ipswich Hamlet, Essex County, Mass., as the agent of the first association of reliable people who had appeared before Congress "talking business" about the settlement of the Northwest. Previous to this, in 1783, Timothy Pickering, of Massachusetts, had drawn up "a proposition for settling a new State by such officers and soldiers of the Federal Army as should associate for that purpose." Other influential people from the same part of the country, Gen. Rufus Putnam among them, had been considering the same proposition. But "the total exclusion of slavery from the State was to form an essential and uneradicable part of the constitution." Massachusetts, in her constitution of 1780, had abolished slavery,

established public schools for general education, and enacted the most advanced code of laws concerning the liberties and natural rights of man, civil jurisprudence, and public polity which the world had then seen. No plan of organization could have succeeded unless the New England men had felt that they were taking their laws and institutions with them to their new western home.

An association had been formed in Boston composed of a large number of the most respectable and influential veterans of the Revolution. They proposed, as an open door of relief for the prevailing financial depression, poverty, and disaffection of the country, that Congress should accept the certificates of indebtedness in which the Government was paying its creditors, then worth 12 cents on a dollar, in exchange for a great belt of land in the Territory of Ohio, to be at once occupied by a bonafide colony with the intention of establishing a new commonwealth. Dr. Cutler appeared at New York with full power to act for "the Ohio company" and afterwards for a new combination, representing the purchase of 5,000,000 acres in the southeast corner of Ohio. For this land \$3,000,000 in scrip was to be paid, thus representing a real cost of less than 10 cents per acre.

Here was "a condition and not a theory" presented for the first time to this noisy debating society, the Congress of the Confederation. The conditions were inexorable, for no immigrating body of New England people would "go West" unless they could carry along their own New England institutions. They would remove beyond the mountains only on condition they could carry there the radical ideas inscribed in the constitution of Massachusetts of 1780. These were: Free soil and expanded ideas of freedom in religion and universal education, including the university under State control, with other principles and practices now the commonplace of American society but at that time warmly debated even among the foremost minds of the day. Dr. Cutler did not appear importunate. New England was not dying to go West; was rather indifferent and skeptical concerning this section. Other lands in plenty for colonization could be had in half a dozen States east of the Alleghanies.

The result was that Dr. Cutler was invited to suggest amendments to the bill. He placed in it, as he asserts, and it has now been incontestably proved, the prohibition of slavery and the memorable clause: "Religion, morality, and knowledge being essential to good government and the happiness of mankind, schools and the means of education shall forever be encouraged." With no essential modification, as proposed in his draft, the ordinance was passed on July 13, and the good doctor returned to Massachusetts to set in motion the first wave of that resistless tide of emigration which, in a hundred years, has made the great Northwest the present center and political arbiter of the Republic.

It is only necessary to glance at the terms of this great "compact" to realize its importance to the future of the Republic. In its several articles it prohibited forever slavery. It gave the American common school, including the State University, heretofore a local institution, a national indorsement and placed upon it, at once and forever, the great seal of national approval. It guaranteed religious liberty in its broadest application to a society, itself the best product of the eighteen centuries of Christian education in the civilized nations of the earth. It also asserted the obligation of States and Government to favor religion and morality in that general application to public and private affairs without which American society will collapse into a hopeless anarchy. It provided for the obligation of contracts—the first time such a provision was found in the fundamental law of any civilized country. It forbade primogeniture, affirmed the right of habeas corpus and trial by jury, a proportional representation in the legislature, judicial proceedings according to the course of the common law, with all the guaranties of our present advanced ideas of government. All were included in principle, and some of them expressed in the language of the constitution of Massachusetts. The provision that, before all others, has made the American Republic what it is, the guaranty of universal education by public aid, had always been the common habit of New Eng-

land and was her greatest contribution to the life of the new Union that only a few weeks later was born in the adoption of the Constitution of the United States of America by the convention in Philadelphia.

Along with this ordinance a part of the legislation that gave it effect was the provision in the land ordinance of 1785 that assigned the sixteenth section of each township, containing 640 acres, for public education. By the insistence of Dr. Cutler, as the condition of the Ohio purchase, there was inserted the additional provision of two additional townships of the State for a university, and one for the support of an educated ministry. The provision for the support of religion seems to have been of little effect. But the great endowment of education by the gift of one thirty-sixth of the entire area of this vast territory was the corner stone on which, first, the old Northwest, and afterwards, the entire Union from the Alleghenies to the Pacific Ocean, has built up its comprehensive system of education, including every grade from the little country district school to the university for academical and industrial education. Under this magnificent endowment, unprecedented in human history, nearly 60,000,000 acres of land for common schools, besides 1,000,000 acres for university uses, have been given to the States of the Northwest and Pacific Coast, with additional money endowments to the States from the act of 1890; and to the whole body of States not less than 140,000 acres. The States admitted to the Union after its formation, with populations largely built up of emigrants from foreign lands, have been able by this means to put on the ground, at once, such a provision for popular instruction as no other nation in the world at present enjoys.

But we shall greatly mistake if we claim for any one man, however efficient at the last event, or any section of the country, the sole or even the chief honor for this great victory of universal education over its numerous and powerful enemies in 1787. Never before that eventful week had the friends of the new American common school found a common ground upon which they could work together for good. Under the conditions then and for many succeeding years existing in all the eight States beyond the Hudson River it was impossible to establish anything like a satisfactory system of public instruction for all classes and conditions of people. But here was a new world, a vast empire, awaiting the coming of new generations—the morning land of the new republic. Here, as by common consent, what could not be done elsewhere could be achieved. Without the consent of the nine of the thirteen States which were slave-holding, and none of them public-school Commonwealths, no one of these features of the great “compact” could have been included in the ordinance of 1787. But all united, save one member, to vote in the “good time coming” to mankind.

No other explanation can be found of that remarkable fact, without which American history will remain a perpetual puzzle, than this: That, in every colony of the original thirteen, great masses of the people, represented by the wisest leaders of the old American life, believed in and were determined to obtain the precious boon of education for their children. It was finally obtained by the unanimous consent of all the original States. Here is the one satisfactory explanation of the people's real intent, that, in 1787, before the Constitution of the United States was formed, the confederated thirteen American States dedicated to education, in the only territory over which they had exclusive control, an endowment of public land such as never has been given by any other people since the world was made.

Here, then, is the upland from which the new educational departure in American life is to be made. Here is prefigured the ideal of Republican institutions, the gospel of American Democracy, embodied in the immortal words of this ordinance, set up like a beacon light for the guidance of the nation through the stormy passage yet before it in the long years to come.

CHAPTER XVII.

ROBERT CHARLES WINTHROP AND THE PEABODY EDUCATION FUND FOR THE SOUTH.

BY REV. A. D. MAYO, LL. D.

The death of Robert Charles Winthrop, in Boston, Mass., November 16, 1894, has called forth a great variety of notable memorial tributes from the press and the various public and private associations with which he had been connected during his long and laborious life. It only remains that a more extended notice than has yet been given to his services in what may fitly be called the department of educational statesmanship should be added to this long procession of eloquent commemoration. The sole purpose of the present essay is the attempt to place this, in his own estimation by far the most interesting and influential of his numerous and important contributions to the "general welfare" of the Republic, in its proper relations. And my excuse for undertaking this work is that for the past fifteen years my own lot has been cast in a ministry of education through all our Southern States, no week of which has failed to bring me in contact with the powerful and beneficent work of the Peabody Education Fund, with which the closing twenty-eight years of the long life of Mr. Winthrop were identified as the president and animating spirit of this organization for the blessing of a whole section of the country and a benediction to the Republic.

We shall see that by family descent, by personal aptitude, culture, and environment this great and good man would be found among the foremost in the long line of the public men of his State and section in that general service to education which is perhaps the most decisive test of a genuine American statesmanship. But the service I commemorate is of a far more radical and comprehensive quality. It was after the voluntary retirement of Mr. Winthrop from a distinguished political career, which had only received a temporary check during the turbulent years before the outbreak of our civil war, at the age of 57, amid surroundings which were a great temptation to a dignified retirement from all public labors and responsibilities, that he was summoned by George Peabody as confidential friend and adviser in what was then the greatest series of personal benefactions ever made to education and still remains the most memorable public demonstration in history by a private citizen in behalf of national peace and good will. It was indeed a "red letter day" in modern civilization when George Peabody

body, sitting in the hall of Robert C. Winthrop's beautiful home in Brookline, Mass., under the portrait of Benjamin Franklin, the educator of the central American colonies for the war of Independence, opened his leather wallet and brought forth, one by one, the documents and securities of the proposed donations to education in his native land, involving, with their subsequent additions, an expenditure of nearly \$10,000,000, and invited his old friend to be henceforth his "alter ego," adviser, and most responsible administrator of the greatest of all these donations. Well might even a man already so generously adorned with public honors and private regards as Mr. Winthrop declare with prophetic enthusiasm: "This is the greatest honor of my life." From that hour he gave himself, heart and soul and mind and strength, to this mighty work of national reconciliation on the line of education, through the twenty-eight remaining best years of his life. And at the close he declared that he regarded the work to which he had been thus providentially called the most important service he had been able to render to his country.

As in all the highest things done in this world, the superior element of this service was personal. Here was the one man, so fashioned by honorable descent, by broad general culture, by eminent social relations and easy pecuniary estate, by long and valuable public service in the critical years of the national life, and perhaps by the widest personal acquaintance of any American with famous people at home and abroad, by close and familiar contact with the inner life of universities, charitable and historical associations, and, above all, by an intelligent and invincible faith in the American system of universal education, that in looking across the sea it is no wonder that George Peabody saw his venerable forehead lifted above all others as the true yokefellow in his inspired charity for American children and youth.

But even this remarkable outfit of qualifications for such a position would have failed of the result without the personal peculiarity of this man, at once so positive and resolute in his ideals and in his dealing with affairs, so generous and forbearing, so consecrated to liberty and union, and yet so tactful and honorable toward all who had, by the terrible fate of civil war, seemed for a time arrayed in implacable hostility to both, so immovably fixed in his confidence in the American common school as the corner stone of American society, and yet so courteous, appreciative, and patient toward communities and people which for two centuries had not included it in their scheme of education. It must have been in recognition of this personal quality in his ancestral line that the friends and neighbors of the old Winthrops in the mother country placed on the tablet above the family tomb in Groton church, Suffolk: "Blessed are the peacemakers, for they shall be called the children of God."

We have here no controversy with that "science of history" which leaves out God and man as motive powers, and remands human life to

the dreary monotony of an upward fatalistic evolution of inevitable events. But if there was a God in our Israel in the days of the fathers, He is our God to-day; never more abundantly manifested than in the history of the development of the American common school in the sixteen Southern States of this Republic during the past thirty years. And if any men of our "grand and awful time" can fitly be named as "coworkers with God," it is that committee of forty-eight, the trustees, agents, and educators of the Peabody Education Fund, of which the illustrious brotherhood, George Peabody and Robert Charles Winthrop, were the acknowledged head, and of which Barnas Sears, Dr. J. L. M. Curry, Eben Stearns, and William H. Payne for a generation have been members.

This service of Mr. Winthrop consisted, first, of an intimate relation, so constant and confidential that its details can never be known, with Mr. Peabody during the few closing years of his life, and, after his death, of the acknowledged headship of the administration of his magnificent benefaction. Although George Peabody, from his wide acquaintance in our country and remarkable practical knowledge of men, was able to nominate the original sixteen trustees of his fund and to indicate the general lines of operation in its use and distribution, yet, from the nature of the case, he must have depended largely on Mr. Winthrop at every step of the details of the organization, the selection of the indispensable executive agents, the methods of approach to the Southern communities, and the most effective way of distributing a fund apparently so large and yet so easy to be set adrift downstream in a freshet of sentimental, sectarian, or patriotic charity.

It was Mr. Winthrop who sought out and almost "laid violent hands upon" President Barnas Sears, of Brown University, Rhode Island, as the first agent of the organization, and who encouraged Dr. Sears to summon Dr. Eben Stearns to a new lease of life, more crowded with splendid success than all that went before, in the first mastership of the Peabody Normal School. It was Mr. Winthrop who, with admirable recognition of the best educational traditions of the State of Tennessee and the city of Nashville, married this first great normal school of the South to the old university projected by Dr. Lindsey, and by him held up with marvelous courage, faith, and sacrifice through a long and anxious life. It was Mr. Winthrop who, even before the death of Dr. Sears, had, at his suggestion, fixed his eyes on Dr. J. L. M. Curry, who began his public life in the legislature of Alabama as an advocate for the public school and, at the close of the war, like so many of the ablest leaders of the Confederacy, had retired to a college professorship and presidency, as his probable successor. Mr. Winthrop had, with Dr. Samuel Green, of Boston, shouldered the entire responsibility of administering the Peabody Education Fund during Dr. Curry's two years' absence as minister at the Court of Spain, that he might return to his most honorable position as agent both of the Peabody and Slater

educational funds of the South. It was Mr. Winthrop who earnestly cooperated in bringing Dr. William H. Payne from the University of Michigan to Nashville as the successor of Dr. Stearns. It was he who, from first to last, insisted that the Peabody Fund should be solely used for the education of all the children of the South in the American common school and, when the income of the fund proved insufficient to continue the work of subsidizing many schools, pleaded with Congress and the country for that national aid to education, especially for the overcoming of Southern illiteracy, and, on the failure of that, cooperated so vigorously in concentrating the benefits of the fund on the training of teachers for the new common schools of the South. And all this was done as the genuine expression of an intense and patient consecration of himself to this great and good work, whereby he exalted the private citizen of Boston to a position of educational statesmanship, in its ultimate results second to that of no man during the years since the close of the war of brothers sent for the punishment of our national transgressions and to assure the perpetual union of American States in a Republic such as was never before known in the annals of mankind.

We use the phrase "educational statesmanship" advisedly, for in our country it has a peculiar significance, and, like the common school, is one of the most characteristic features of our order of republican society. The schoolmen of different sections of the Union are in frequent controversy concerning the real origin of the common school that now, after a steady growth of two hundred and fifty years, has become a vital part of the organization of every State and Territory and is more and more regarded as that stone so long "rejected by the builders" of the national life, only to become "the head of the corner."

Of course, no human institution so beneficent and so comprehensive in its influence as the American common school ever sprung full grown from the brain of any great educator or was finally developed by any people save through the experimenting and varied experience of many years. There had been free schools established by the clergy of great churches, the gifts of benevolent individuals, the governments of feudal towns, and exclusive guilds and associations of private families, in all civilized lands, before the Pilgrims came to Plymouth Rock. Even they, though abiding for eleven years in Holland, the country that up to that date had done the most for popular education, were so little impressed with what they saw abroad that for many years no public school was established in the original Puritan colony. The public schools of Manhattan Island, under the Dutch régime, were church parochial schools, subsidized by the trading company that for sixty-eight years misgoverned the valley of the Hudson and finally collapsed by the revolt of its own worried and exasperated people.

For the first time in human history the whole responsible people of the two leading New England colonies, Massachusetts and Connecticut, voted to establish schools fashioned somewhat after the style of the English free schools of the day, but, in their case, the true children of

the people. If there is anything that can reconcile us to the persistent religious bigotry of the early settlers of New England it is the fact that under that tremendous and peculiar régime, where a set of the most obstinately individual people on God's earth agreed to live together as a church that kept all outsiders "out in the cold," what we call the "religious question" never came up as a hindrance to a system of popular education. Every American colony beyond the Hudson was so distracted by its cosmopolitan and sectarian religious conformation that it was impossible that any general scheme for schooling the children together could be adopted. But in Massachusetts and Connecticut the people, with the exception of an insignificant minority, for almost a century were practically of one mind about their church affairs, and were at liberty to plant deep and strong the radical idea of New England life, that the responsible people of a community should make the church, make the state, and make the school.

The old-time New England parson, the scarecrow of all the small children of the rival churches, was simply a minister, elected to his place for life, but dependent on his people for his living and every opportunity of usefulness, from the first kept in his own somewhat expanded sphere by a public opinion that no ecclesiastic was strong enough to permanently withstand. The Massachusetts and Connecticut colonies were from the beginning virtual republics, by open protest or indirect policy holding the civil and religious domination of the mother country at arm's length for one hundred and fifty years.

The common school of New England was from the beginning a people's school. John Winthrop, first governor of the Massachusetts Bay Colony, contributed generously with Vane and Bellingham to found the first schools in Boston. At once the neighboring settlements "followed suit" and schools were established by the voluntary contributions of the people, reenforced by a rate imposed on everybody who would not contribute. The whole scheme was clinched by the original series of the laws of 1647, compelling every family to school its children and every town of sufficient population to support a free school to fit boys for the university. Governor John Winthrop, the American ancestor of Robert C. Winthrop, by a speech in the general court, secured the appropriation of a sum larger than all the remaining colonial tax to found the college that later became Harvard University. He contributed a collection of books, was one of its fast friends, and, under his administration in the various high positions occupied by him the first school legislation of Massachusetts was enacted, which was the real beginning of the present American common school. The same result followed the administration of the "two Johns," both governors of Connecticut, son and grandson of John Winthrop.

Before the war of the Revolution that colony could boast of what no American State to-day can affirm—that there was no illiteracy within its borders.

The one essential feature of the American common school, which

differentiates it from the great European systems of public education, is this: That it is a school "of the people, by the people, for the people." The legal voters of the community establish a school system for all the children. They pay for it and make it free or otherwise; send their children; choose its officers and teachers; through an elective board arrange all the details of its organization, instruction, and discipline, and supervise it through officials responsible to themselves. An American State legislature is only an elected and temporary committee of the whole people, its only function in education being every year to respond to the public opinion of its masters.

The common school, thus established, is the animating soul of our entire scheme of American universal education, beyond itself, indirectly but inevitably, modifying and molding all private, corporate, and parochial organizations, academic, industrial, professional, and æsthetic. Because of this, like our government and order of society, it only grows with the people, and may reach conditions of success impossible to any rival system, however complete, but with a narrower base, in other lands.

Out of this radical organization there naturally grows up an educational public, apart from the teachers and professional educators, who in former times and still in other countries maintain an almost despotic control of the entire realm of education. In every community in the United States, however benighted or enlightened, I find this educational public, the superior people of every class, race, religion, and condition, who believe in the American system of universal education and are determined that in this respect "the Republic shall receive no harm."³ They are the people who insist on the schooling of all children for American citizenship; persuade or force the community to support public schools and agitate for their constant improvement; insist that the best of its kind is "none too good" for the humblest child destined to the loftiest earthly position—sovereign citizenship in the world's chief Republic; take the responsibility to "revise and correct" the educational schemes of professional ecclesiastics, scholars and schoolmen; and, by a roundabout common sense and knowledge of the necessities and capabilities of the community at any given time, decide finally what shall be done.

As representative of this educational public there has grown up in every American community an office, not sharply defined, but none the less inevitable, which we may call educational statesmanship. It appears in public life, in legislature and Congress, where the ability is demanded to formulate the people's will in any special direction concerning education. But its most effective development is not unfrequently found outside of politics. Indeed, partisan politics is one of the most dangerous enemies of the American common school. Oftener than otherwise, the true educational statesman is found in some influential, broad-minded, persistent man or woman citizen whose life is

consecrated to the education of the community into right ideas concerning this the most vital moving power of the State.

Herein is one of the chronic failures of the teaching class, sometimes even of the most eminent educators, to understand the "true inwardness" of the educational system of which they are a part, and no observer of American affairs from abroad has fully comprehended it. For it is the most characteristic feature of our American system of universal education, through all its complex and comprehensive organism "working together for good," that it can not be dominated by a professional class of any sort. The priest, the politician, and the teacher are only its representatives and ministers. In the last resort it is the decision of the educational public, representing the whole people, itself represented by the educational statesmanship of any portion of the land, which determines the organization and sets the gauge for the practical ongoing of the people's school.

It seems little short of a special providence that George Peabody was born and until early manhood lived in New England, the home of this the most peculiar development of the national life. All his own education he owed to the country and village district school of the Massachusetts of nearly a century ago. But so impressed had he been by what came to him there that, although his fortune and fame were acquired in that portion of his own country where this system of schooling was not established, and in England, which has not yet built on the final foundations of public education; yet when he came to make his splendid gift for the children of the South, he tied it up with conditions that made it practically impossible it should be used in any other way than it was. In nominating his original board of trustees he not only provided for a fair representation of the New England, Central, Western, and Southern States, but selected the sixteen men that, by their high character and exalted position, would be above all suspicion either of incapacity or self-seeking, and would be eminent representatives of the educational public I have described.

Without the little country district school of New England, in the earliest years of the Republic, there would have been no story of this sort to be told. George Peabody, born in the part of the old town of Danvers, Essex County, Mass., which now bears his own name, on February 18, 1795, came into the world that faced the average New England boy of a hundred years ago. His ancestry was good, but his family poor, and his only education was in the district school of the day. But no university ever left on its fondest graduate a stronger and more affectionate remembrance than that same old time New England country district school, as every thoughtful man there taught, thrashed, and persuaded into self-knowledge and self-help can testify.

At the age of 11 he was apprenticed to the seminary next in value for a student of American life, an old-time New England country store, where the clerk was expected to do all sorts of work and face all sorts

of people in selling all sorts of merchandise, from a "point of ile," a jug of New England rum, and a gallon of "them molasses" up to a farmer's ax, "a pound of Epsom salts," and the outfit of a rural bride. He "came, saw, and conquered," and, at 14, like so many "down East" boys eager to "go West," compromised a while on Vermont, returning to Newburyport, Mass., without a dollar. He drew in the same harness well nigh through his "teens," till he was "burned out."

Invited then by his uncle, he moved to Georgetown, D. C. There we find him what we now call the "traveling man" of a firm of merchants in that little city, and afterwards as the active partner of a larger establishment in Baltimore, where his first \$5,000 was made. No better "training school" for a successful man of affairs could be found than the middle and border Southern States—Pennsylvania, New Jersey, Maryland, Virginia—of those years, all of which were traversed by this indefatigable young fellow, year after year, bent on traffic and studying men and things as only young George Peabody could "take them in." He shouldered arms in the war of 1812 as a home guard in the siege of Washington. His first earnings went to his mother, and one of the last uses of his great wealth was to build and consecrate a beautiful church to her memory, in her native town, with the annex of a generous gift for the general welfare of the place. By 1827 he was found, like Ben Franklin before him, in London, where at last, in 1837, he was established as a broker and general operator in exchange, and there his great fortune of \$15,000,000 was made.

All this time he remained an American of the enlarged New England type—his name never in the London directory, but himself broadened and enriched by contact with other parts of his own and residence in foreign countries. He tells us that from his early manhood he contemplated the use to which he finally devoted two-thirds of his fortune. In well-known public and in many private ways he manifested his affectionate and practical interest in his countrymen. But it was after the age of 50, during the remaining twenty years of his life, that his most notable benefactions were made. Like the modest gift of Dr. Franklin, whose donation to Boston at his death is now rising in a great public institution for free instruction in mechanical trades, George Peabody gave to London, in 1852, a sum of \$2,500,000, which, he estimated, with careful handling, would, in two hundred years afford substantial aid to two-thirds of the industrious poor of that vast world-receptacle of mingled splendor and misery.

Then began his gifts to his own country; first to his native town, then to the city of his early adoption, in the splendid "Peabody Institute," of Baltimore. In a memorable interview with Robert C. Winthrop, after long correspondence, in October, 1866, he opened his budget of blessings, culminating in his donation of \$1,000,000, besides an additional \$1,500,000 in the securities of a Southern State, for the education

of the children of the South, with a list of sixteen life trustees to attend to its management and distribution. A subsequent visit to America, the year of his death, completed this romance of magnificent munificence, he leaving to the Peabody Education Fund another \$1,000,000, with the expectation that the more than a million and a half additional in the paper of the two States that afterwards failed to return the clasp of the hand held out in behalf of the children would become available. The public benefactions of Mr. Peabody amount nearly to the great sum of \$10,000,000, while \$5,000,000 were used, as he said, "to make everyone of his near relatives rich."

One of the conditions of the Southern gift had been that Mr. Robert C. Winthrop should be the permanent president and Hon. Hamilton Fish, of New York, and Bishop McIlvaine, of Ohio, the first vice-presidents of the board of sixteen trustees; thus including the Eastern, Central, and Western States in the organization of this large national trust.

Certainly no man in America was better qualified in every way than Robert C. Winthrop for this presidency. Born into the upper realm of the New England social estate, he was, by inheritance and family tradition, a natural friend of education. His American ancestor, John Winthrop, first governor of Massachusetts, through his entire colonial life of eleven years, had a hand in everything called education in that little colony of the better sort of English folk more than two hundred years before. During his administration the foundations of the American common school, from the country and village district to the State university, were laid in the new colony. And of that other notable organization of a broad and free Christianity, although a born churchman who never withdrew his respect from his spiritual mother, the New England Congregational Church, the child of the people, he became a faithful and influential member, not infrequently a preacher of remarkable power. His son, John Winthrop, jr., and another descendant of the family, both governors of Connecticut, were not behind their father and grandfather in the same good work. Another member of the family became a noted professor of Harvard College, esteemed as one of the foremost scientific men of that early day. Like all these old families of New England, worthies and unworthies, the house of Winthrop blossomed out, until its record includes a roll as honorable as any in the land.

Robert Charles Winthrop was born in Boston in 1809. He told me of the escape he and the occupant of the adjoining seat in the National House of Representatives, Mr. Robert Barnwell Rhett, had from exchanging places in the then two representative hostile States of the Union, Massachusetts and South Carolina. At an early period the father of Winthrop removed to Charleston, S. C. One of Mr. Winthrop's brothers, I understood, was born, lived, and died in that city. The parents of Mr. Rhett, if they ever carried out their purpose of going to Boston, returned in time to save their famous son from becom-

ing an Abolitionist of the Wendell Phillips type. Whether Mr. Winthrop could have been entirely changed from the broad and thoughtful conservatism of his nature, even by birth and residence in the Palmetto State, is questionable, though he might well have become the same sort of man as his friend, the ideal planter, governor, and publicist, Hon. William Aiken, afterwards a zealous and life-long member of the board of Peabody trustees.

At an early age young Winthrop had begun to climb the ladder of old-time Whig statesmanship, whose foot for twenty years rested on the threshold of every promising well-born son of Massachusetts. He was graduated from Harvard at 19, studied law three years in the office of Daniel Webster, and was admitted to the bar at the age of 22. At 25 we find him in the legislature of Massachusetts, where he remained for six years, becoming the speaker of the house of representatives of the "great and general court" of his State in 1840. At the age of 31 he represented Boston in Congress, where he remained for ten years. Once elected Speaker of the National House of Representatives, he was defeated for reelection, after a desperate struggle of three weeks, by 3 votes. He was appointed to a seat in the Senate of the United States to fill the unexpired term of Daniel Webster, who had been promoted to Secretary of State, in 1850, and met his first rebuff at home in the effort to secure a reelection to the Senate—defeated by the test of the rising political antislavery sentiment of Massachusetts. He should have ended his public career, like his great ancestor, as governor of the Commonwealth of Massachusetts, and only failed because the present method of election by a plurality vote had not then been adopted.

It must have been a great deal more than a disappointment and disgust over the uncertainties of a political career that determined the final retirement of Mr. Winthrop from public station in 1851, at the age of 42, for he was a devoted friend of the Union during the civil war, and up to 1864 an occasional advocate on the platform of the conservative candidates for the Presidency. It is intimated, and doubtless true, that at different times he had offers of high public position. But, happily for his city, his State, and his country, he had already found his way to that highest upland of American life, where, recognized as "the first citizen" at home, he found himself promoted to the most honorable position in the Republic—educational statesman out of office. Here, lifted above the contentions, triumphs, and defeats of politics, he could preside at the making of the citizenship of the new Republic and in the inauguration through half the Union of that great agency of popular education, the common school, without which our actual "liberty and union" becomes only the dim and distant echo of those far-resounding names.

Through all these years he was taking the elementary "course of study" which would graduate him later into the presidency of the

Peabody Education Fund. For twenty-five years he was president of the Boston Provident Association, one of the most reliable of the many charities of that charitable city. For thirty years he was president of the Massachusetts Historical Society, and its archives bear learned and eloquent testimony to his faithful labors there, including his valuable biography of John Winthrop. For eight years he was president of the alumni of his alma mater, "Fair Harvard," and always a most devoted son of the firstborn of our great American universities. He was chairman of the overseers of the poor of Boston, and in many good ways a laborious citizen of his native city. He naturally stepped into the chairmanship of the board of commissioners charged with the erection of the Boston Public Library building in 1858. Now, this institution, on stepping into its spacious new home, with its collection of more than 600,000 books, has become only second to the National Library at Washington.

All this while his eminent gift of noble and inspiring oratory was at the command of every good cause, ready to pay tribute to every superior man. It is said that he pronounced no less than 150 memorial orations or eulogies upon as many eminent Americans, besides others commemorating celebrated men of other lands. The four collected volumes of his addresses and speeches will always remain a model for that style of public address. At the founding of the Winthrop Common Schoolhouse in Boston he spoke noble words concerning the priceless heritage of New England to the Republic, the common school. One of the most eloquent and discriminating of the many important addresses called forth in New England by the great revival of popular education, under the leadership of Horace Mann, was Mr. Winthrop's admirable oration before a library society in Boston in 1838, entitled "Free Schools and Free Government." It contained a definition of education that should be printed as a "broadside" and hung up in every normal school in the land. At a gathering of farmers in Hampshire County, Mass., he outlined the policy of agricultural education now everywhere in operation, and paid this eloquent tribute to the common school:

Other nations may boast of their magnificent gems and monster diamonds. Our Kohinoor is our common-school system. This is our "mountain of light"; not snatched, indeed, as a prize from a barbarous foe, not destined to deck a royal brow, or to irradiate a crystal palace, but whose pure and penetrating ray illumines every brow and enlightens every mind and cheers every heart and every hearthstone in the land, and which supplies from its exhaustless mines ornaments of grace unto the head and chains upon the neck of every son and daughter of Massachusetts.

At the dedication of the Boston Public Library he anticipated what has since become a commonplace of educational policy, the union of the free library with the common school, whereby Massachusetts now has placed a free school library before 90 per cent of all the children of the State.

His commemoration addresses on Webster, Bowdoin, Franklin, J. Q.

Adams, and numerous other notable characters of his own generation were models of that often most dreary realm of oratory. He was the orator at the beginning and completion of the National Washington Monument, first by position and afterwards by invitation of Congress. And, above all, I rank his matchless address at the centennial celebration in Yorktown, Va., in October, 1881, which should be printed for "supplementary reading" in history in every American school. These, with great numbers of addresses and other interesting papers, declare him one of the most versatile and instructive public speakers and writers of his day.

Dr. James Walker, greatest of the old-time parson presidents of Harvard, said to me, "The oration will die with Robert C. Winthrop." Indeed, of this superb Yorktown oration it may almost be said—what Wagner writes of the ninth symphony of Beethoven—that here the summit pinnacle of music had been scaled and hereafter the musical drama, the marriage of all the fine arts set to music, was only possible. The oration before a cultured or popular audience, or even as a belated intruder in the national Senate, is now but a reminiscence. The place of the orator is to-day occupied by the man who, with his mind crowded with the facts and weighty reasons of his theme, takes his hearers into his confidence and leads them on, through every agency of instructive, persuasive, and magnetic speech, to the irresistible conviction at the close.

And all this time was Mr. Winthrop one of the best beloved and honored men in the true "upper ten" of his own and other lands; and his last volume, "written for his grandchildren," is a delightful record of such an acquaintance with the most eminent people of many countries as probably no other American can boast.

So there was no mistake made when George Peabody took Robert C. Winthrop into his confidence on the autumn day when he sat in his hall at Brookline, under the portrait of Benjamin Franklin, and unfolded the inspiring record of his own contemplated beneficence in the way of "aid and comfort" to education; a benefaction still for thoughtful charity, variety, and practical utility unrivaled even by the magnificent bequests of which it was the precursor and often the suggestion. George Peabody knew the man of whom he said, two years after the organization of the trust, "Mr. Winthrop, to whom I am so much indebted for cordial sympathy and careful, consistent, and wise counsel in this matter." Deliberate words, every one "a word of truth and soberness."

At once Mr. Winthrop recognized that he had heard his divine "call" and declared with prophetic foresight, "This is the greatest honor of my life." Indeed, what reward can be given to any man more grateful and more weighted with high responsibility and grand opportunity than, at the end of an honorable public career, to hear the summons to the perpetual service of neighborhood, State, or nation,

with a standing commission from the people to labor in the school, the church, and the charities that so ennoble our age and are the real motive powers of the highest national life? No member of that illustrious group of Peabody trustees, however great may have been his former services and distinctions, but must have felt that this was indeed the richest honor and most precious opportunity for beneficent and influential work in his career. It was reserved for one of this body to solve our old civic puzzle, "What use has the country for an ex-President of the United States?" Rutherford B. Hayes retired from one of the purest and most useful administrations of that supreme American office only to step upward, hand in hand with his admirable wife, into a no less eminent career of laborious and helpful service in behalf of education, charity, and all things included in the religion of the Golden Rule, the Lord's Prayer, the Beatitudes, and the Sermon on the Mount.

On a memorable day, February 8, 1867—the board of Peabody trustees held its first meeting, in Willard's Hotel in Washington. It is recorded, as one of the many spectacles and occasions of which a noble gallery of educational memorial pictures might be painted, that this meeting was opened with prayer by the venerable Bishop Melvaine, while General Grant knelt beside him in humble supplication to the God of all the children. Another picture might well be George Peabody and Robert C. Winthrop, seated under the portrait of Benjamin Franklin, taking high counsel together in behalf of Young America. Still another, when, at a meeting, about the year 1870, in the city of Houston, Tex., called in behalf of education, in the midst of aimless and inconclusive debate, a plain, elderly, stranger gentleman arose and asked permission to speak, announcing himself as Barnas Sears, and in a voice scarcely above a whisper (for he was a victim of the "great American catarrh" through his entire first visit to this then distant land) told the people that he was the agent of the Peabody Education Fund and would be happy to supplement any appropriation for a common school, free to all the children, to the extent of one-third its cost, and thus notably assisted at the beginning of the now rapidly expanding public-school system of that most extensive of the United States. Still others, a succession of memorable pictures, commemorating the death and burial of this man, of whom Victor Hugo wrote, "On the earth there are men of hate and men of love; of the latter is George Peabody, that great citizen of the world and great brother of all men," lying in state in Westminster Abbey; the "sailing out into the west" of the British battle ship *Monarch*, convoyed by an American and French steamer, the room where lay the coffin, fitly draped, with candles burning day and night; the reception of the fleet in the harbor of Portland, Me., an outpost of the Massachusetts of George Peabody's boyhood; the final service of burial beside his mother, so longed for that his dying words were, "Remember Danvers," fitly closed by the noble

funeral oration by Robert C. Winthrop, president of the Peabody Education Fund. The donor had said, in a voice trembling through happy tears at his final gift of \$1,000,000, at Newport, "This I give to the suffering South for the good of the whole country." Well might George Peabody say, at the dedication of the Peabody Institute at Baltimore, "May not this institution be a common ground where all may meet, burying forever differences and animosities, forgetting past separations and estrangements, weaving the bonds of mutual attachments to the city, to the State, and to the nation?" Supported by the blessed faith in God and in the Son of God, "who took little children in his arms and blessed them," this childless man wrote these words, "Education, a debt due from the present to future generations." On his death bed he said, "It is a great mystery, but I shall know all soon." Well might the solemnities of that memorable funeral at Danvers be closed by the impressive words of Mr. Winthrop, "And so we bid thee farewell, brave, honest, noble-hearted friend of mankind."

It would be both unprofitable and discourteous here to anticipate the history of the Peabody Education Fund, now in preparation by its agent, Dr. J. L. M. Curry, probably to be issued in 1897 at the close of the thirty years named in Mr. Peabody's original communication, whereby at that date two-thirds of the trustees are empowered to appropriate the bulk of the funds to such educational institutions or agencies as then may approve themselves as suitable beneficiaries. But time enough has elapsed to reveal to the educational public of the whole country the wonderful influence of this unique organization of national beneficence upon the South and the profound significance of its policy to the future of the whole United States.

In estimating this influence, the establishment of schools and the distribution of the income of the fund, already amounting to nearly the entire original available sum, leaving that untouched, with the planting of what Mr. Winthrop loved to call "our great normal college at Nashville," are of subordinate importance. They are at best revelations and illustrations of the central policy of a board of management without question the most eminent and widely representative of the true educational public of the country ever gathered and held together for an entire generation in the United States.

At the late memorial meeting of the Massachusetts Historical Society Mr. Charles Francis Adams suggested that the true place of Mr. Winthrop would have been the presidency of a "great national academy," similar to the European organizations of that sort. But if the Old World civilization of the last five hundred years has ever presented the spectacle of such a private consecration of large possessions to the educational and charitable uplift of mankind on two continents as that of George Peabody; or if any body of men, on the whole representing more of personal worth and exalted position, has been held up for thirty years to such a task as setting the pitch for the reorganization

of education in a dozen great Commonwealths in the industrial, public, and social condition of our Southern States at the close of our civil war; or if even the splendid personality of Mr. Winthrop, decorated with the gorgeous regalia in which the Old World still delights to envelop its superior official class, would have seemed more venerable than in his own continuous, modest presiding over that illustrious group of gentlemen, the trustees of the Peabody Education Fund, I am unable to comprehend the significance of the past century in the march of human events.

The appointment of the original body of trustees and the arrangement for its continuous life was in itself a master stroke of educational statesmanship by Mr. Peabody. So wisely and well was this arranged that probably there has never been in any country a working board, intrusted with great educational funds, that represented so varied and in almost every person so eminent an array of high character, ability, and large experience in affairs, combined with distinguished station. Here have been found three Presidents of the United States, two Chief Justices of the Supreme Court of the United States, and several distinguished members of the State judiciaries; famous military men, both of the Union and Confederate armies; Members of Congress, Cabinet Ministers, two bishops of the church, financiers like Drexel and Morgan, mayors of cities, and a generous representation of that most reliable class, the men of substance and character identified with the educational progress of their own localities.

Indeed, the majority of these men had been or were then in exalted public station. The Army and the Navy were represented by Grant and Farragut; the law by Evarts and Clifford; business by several of the most conspicuous financiers of the land. The ideal Southern planter was found in Governor Aiken, of South Carolina; the Northern and Southern retired gentlemen of cultivated proclivities by Eaton, Bradford, Russel, and McAllister. It was only at a later period that the professional educator appeared, in the person of the distinguished president, D. C. Gilman, of Johns Hopkins University, Baltimore.

And it is a remarkable fact that such a board, composed of men burdened with great affairs, living widely apart, has never in its thirty-three meetings, extending over twenty-eight years, failed of a quorum. The President of the United States, Mr. Cleveland, on one occasion telegraphed to New York that, although detained at the capital by imperative duties, he would come if necessary to the transaction of business. Mr. Winthrop, appointed by Mr. Peabody as permanent chairman of this "great school committee," was never absent but three times from his post—once when detained abroad by sickness in his family and twice almost held by force at home by the insistence of physicians and friends on account of the infirmities of age.

Perhaps the most powerful and perpetual significance of the life of the Peabody board of trustees has been in this, that it has demonstrated

to the satisfaction of the people of the South and of the whole country that only along the educational line of operation has there been or can there be surveyed and built the grand highway of sectional reconciliation and national unity in American affairs. We have only praise for the persistent and self-sacrificing efforts of the educational missions, established and supported through the expenditure of many millions of dollars in the South by the various Christian churches of the Northern States during the past generation, especially for the general uplift of the colored folk. But, by the nature of the case, these religious bodies were forced to somewhat antagonize their corresponding Southern organizations and for years to work under a cloud of misapprehension. Sectional reconciliation along the ecclesiastical lines of operation has not been and can not be an immediate or permanent success. It hardly required the prophetic foresight of men like Governor Andrew, of Massachusetts, in 1866, President Hayes in 1876, and others of the higher type of statesman for the past quarter of a century to anticipate the certain failure of any partisan political policy to unite the people of all the States. It is a chronic delusion of the average leader of the industrial interests of the country that money is the only real bond that holds the nation together. But below all the material interests of mankind, in the awful depths of our mysterious human nature, slumber the terrible animal forces, the furious passions, ambitions, and blind elemental powers that rock society in periodical earthquakes or overwhelm nations in the hot lava or tidal wave of revolution. The experience of mankind points to but one successful line of approach along which the "men of good will" and the women of true love can proceed with hope of permanent success in a condition of affairs such as prevailed in our Southern States when George Peabody, under the October sun, went out to Brookline to unfold his plan of the reconstruction of the Republic, bearing gifts "to the suffering South for the good of the whole country."

And what a magnificent success has been scored by this act of educational statesmanship, amid the trials and failures of the past thirty years. That Dr. Barnas Sears, a New England man, obnoxious to the leading Southern people on every line of his political creed, an eminent leader of a rival religious sect, proposing a system of universal popular education hardly thought of before except in the original plan of Thomas Jefferson, and rejected as the prime educational heresy by the State of Jefferson for two hundred years—that he, as agent of the Peabody Fund, should have gone through all these States, meeting every order and condition of their people without a jar, everywhere welcomed by the superior class in city and Commonwealth as a new commentary on the Old Scripture, "How beautiful upon the mountains are the feet of him that bringeth good tidings, that publisheth peace," is one of the marvels even of our marvelous American history. The record of the almost unanimous testimony of the progressive leaders of Southern

education is like reading the Sermon on the Mount upon the deck of a vessel, storm tossed and in imminent peril of going to the bottom of the sea.

But all this was only the new American commentary on the old Hebrew prophet, "A little child shall lead them." In these years of material and spiritual prostration, poverty, discouragement, and exasperation the hearts of all good men and women through all the Southland turned from the almost unendurable present to the baby in the cradle, the little children crowding the home, the boys and girls driven to the edge of a premature manhood and womanhood by the snarling of "the wolf at the door." From all that was disheartening and hopeless in private and public affairs, they looked upward, as the hapless sufferers on earth, to the group of rejoicing saints and angels in the upper sky in Raphael's mighty canvas, to this association of remarkable men, the foremost in the land, representing all sections, every creed, and varied stations in life. They were solemnized by the closing scenes in the life and death of their great benefactor, and they took out a new lease of hope, pride, and energy for the coming days.

With the comment of my own ministry of education through every State of the South, now these fifteen years, I have just read through the four volumes which contain the sayings and doings of the managers of the Peabody Education Fund, from their first meeting in Washington, February 8, 1867, to their last assembly, October 5, 1894, when the final words of their honored president were read. And I would entreat every public man, every right-minded citizen inclined to despond concerning American affairs, to "go and do likewise." I do not envy any man, however "wise in his own conceit," who can get up from a careful reading of that record without profound gratitude and thanksgiving to the God of nations that, in this providential way, the people of the whole country have had before them an "object lesson" of the way to heal the wounds of the nation and bind the hearts of all men in a union such as nowhere else has been seen.

It was indeed a most significant response to the almost unanimous action of the old Congress of the Confederation, dedicating the sixteenth sections of the vast wilderness of the national domain to the schooling of the children, a hundred years before. If for nothing else, the Peabody Education Fund would be splendidly justified in its administration, by inaugurating the policy of reconciliation on educational lines through the thirty perilous years of the opening era of the new Republic.

It is difficult for the educators of our great Northern States, born and nurtured in the faith in the American common school as the heart of the American system of universal education, to realize what a significant and profoundly influential step was taken when, at the suggestion of George Peabody, the trustees of the fund indorsed the idea of its sole use in the education of the children and youth of the South in

the American common school, organized, disciplined, instructed, supported, and supervised by the whole people, free to all who come, reaching from the little plantation primary to the State university.

George Peabody had passed his entire manhood in States and countries which had not yet adopted this arrangement for the training of the children and youth through intelligent, moral, and efficient manhood and womanhood. Perhaps all of these trustees were college-bred men of the period when the academy and university held their heads high above the country district school. Several of them were from States, localities, and surroundings hitherto indifferent or hostile to such an experiment. But happily they were all men of large observation and experience in the real life of the American people. So when the question came up, How shall this gift to the suffering South for the good of the whole country be used? they gravitated, after deliberate consideration, to the conclusion to lay the broad foundations of the American common school, first in its elementary department, where even to-day 90 per cent of American children obtain their only education from books and teachers, and proceed onward and upward as time and experience might dictate.

This should be an impressive warning to all people, however "superior," who are now plotting against the people's university, that when the real common sense and the most enlightened, reliable, and patriotic public opinion is brought to bear on any or all the plans for overturning, undermining, or essentially reconstructing the American common school, the result will always be like a Northern April sun playing upon the drifts of a belated April snowstorm. The drifts will dissolve and disappear in a slough of slime and slush, but the April sun will shine on.

Again was the rare wisdom of that notable "school committee" abundantly demonstrated when the real "American Academy," of which Robert C. Winthrop was perpetual president, indicated by its own example the true method of educational administration. "It put down its foot, for good," on the road, worn broad and solid by the American educational public, that the American system of universal education is never to pass from the control of the whole people, acting through their own chosen representatives. The air is full, even to-day, of elaborate plans for transferring the responsibility for the education of the 20,000,000 American children and youth from the old-time church and priesthood to the new domination of despotic chiefs, self-perpetuating boards, or cliques of expert scholars. All those schemes would be failures if attempted, and none of them will ever become a fact.

But the policy of the Peabody trustees also reaffirmed the growing idea of the American educational public, in turning to the highest expert ability of the land for the details of organization, discipline, and instruction, all that concerns the daily and hourly going on of school life in every community. As by an irresistible intuition, Mr. Winthrop turned

to President Barnas Sears, of Brown University, Rhode Island, scholar, divine, professor, university president, State superintendent of common schools, as the one man who could most fitly go forth to the Southern people bearing the message of "peace and good will," clothed in the simple garb of the children's common school. Dr. Sears called Dr. Eben Stearns, from what seemed to him an ideal position at the close of a long and laborious life, to come to Tennessee and once more engage in the founding of the first normal school for the teachers of an entire section of the Union. No two men in the country were in all ways better fitted for the work in hand. As scholars and schoolmen of national reputation they commanded the respect of the highest culture and most competent educational leadership in all these Southern States. By lifelong service they had been in constant contact with the people's common school in its original home. They were, above all, the two men to hold fast to their own "high calling" of a people's schooling with a holy obstinacy that would challenge martyrdom; yet, conservative, cautious, conciliatory by nature, culture, and experience, they were willing to wait for peoples, cities, and States to come round and appreciate what they had in store for the children's good.

From the first, there was the most complete sympathy between the board of trustees and these admirable men. Mr. Winthrop said of the original plan of operation drawn up by Dr. Sears: "It was a perfect chart of our course, as the writer of it has proved to be a perfect pilot." Dr. Sears himself put the whole philosophy of the "new education" into one sentence, in his address to the Virginia constitutional convention in 1868: "The object of the Peabody Education Fund is free schools for the whole people, neither more nor less. We have nothing in view but what is comprised therein."

As an object lesson of the perfect working of the American system of universal education, under the absolute control of the whole people, administered in all its details by an expert corps of tried and experienced officials, this policy of the board of Peabody trustees was of inestimable value to the new schools of the section where its work was done. It quietly waved aside the sectarian priest, the partisan politician, the high-stepping social magnate, and the narrow-minded schoolman, and called the people, represented by their most reliable men in hamlet, city, and State, to assume their rightful oversight of this, the most precious American heritage.

At the same time it labored in season and out of season to build up in the home field a genuine professional class of teachers and educators, competent to face the vast and increasing needs of these sixteen American Commonwealths.

And as an indispensable condition of this achievement, in the selection of the four remarkable men, without whose professional and administrative ability the whole scheme would have been a failure, we note another display of executive wisdom. It was fit that the first general agent

and first master of the Peabody normal school should be selected from the group of tried and best-known educators of the State that gave to the country George Peabody and Robert C. Winthrop. Here were two men, representing New England and New York, where the American system originated, and where, in 1866, it had reached its highest success. But when their places were to be filled by their successors, it was just as fit that the general agency should be held by Dr. J. L. M. Curry, a man who by birth, culture, and public career represented both the old and new order of Southern affairs. And when the place of Dr. Stearns was vacant, it was just as evident that his successor, Dr. William H. Payne, should come from the State of the great Northwest, Michigan, in which, at that time, the American common-school system in all its grades was perhaps most completely illustrated. So should every section of the new Republic have its fit representative in the administrative force of this wise and beneficent scheme.

Even more conspicuous was the wisdom, so rare even to-day in the educational dealing of the North with the South, displayed by the board in its method of approach to the part of the country it was commissioned to assist. It would have been "as easy as preaching" to have gone to these States with a loud and indignant proclamation of the imminent danger to which they were exposed by their almost entire destitution of suitable arrangements for schooling the masses of their people. The personal letters and reports of Drs. Sears and Stearns for the first ten years revealed a condition in this respect that drew from Southern educators and statesmen, like Governor Hugh S. Thompson, of South Carolina, a cry of apprehension on the verge of despair. In State after State, in city after city, a fourth, a third, sometimes almost a half of the people above 10 years of age were found in ignorance of letters. The streets of the villages and the wide spaces of the open country were swarming with untaught children and youth wandering "as sheep without a shepherd." The old system of the secondary and higher education, brought over from the mother country a century before, for the schooling of the children of the well-to-do folk, was greatly broken down by the war, and there was nothing yet established to take its place. No considerable body, even of the more intelligent people in those States, ever realized the full extent of this peril from the lack of the elementary instruction of the coming generation of Southern children, from 1866 to 1880; and by reason of a somewhat sensational and often distorted and exaggerated publication, the educational public of the North was in even a lower depth of misinformation.

But of all this we heard little from these men who, of all others, were best acquainted with the actual condition. They had other work to do than the vain effort to bring 15,000,000 people to the "anxious seat" by parading their needs before mankind. And they counted safely on the sufficient knowledge of the Southern educational public as a fulcrum for the educational lever they proposed to put under the

"mudsills" of every State. So they appealed to the Southern people in the only way by which any community deserving of help and competent for cooperation must be approached by anybody proposing to do them a service in a matter so complex and vast as the training of their children for citizenship in our American Republic.

They called to their attention that George Peabody, and Robert C. Winthrop, and Barnas Sears, and Eben Stearns, and Dr. Curry, and William H. Payne came to them as the representatives of an illustrious official company of the foremost men of the Union, representing all that was most inspiring and memorable in the educational history of their own past. They did not forget to remind Virginia of Thomas Jefferson, still chief among American educational statesmen in and out of office; of the illustrious company of the Revolutionary fathers and their broad plans for the education of the white people and the emancipation of the slaves; of the leadership of Maryland and Virginia and the cooperation of the entire old Atlantic South with the entire North in the original consecration of public lands to the common and superior schooling of the people of the new Northwest, the first record of a similar action in history. They reminded the Southern people that for one hundred years this idea of universal education had never for a day been absent from the minds and hearts of its greatest public men—indeed, that almost every eminent publicist of the South had put on record his profound conviction of the imperative necessity of such an adaptation of the American system as was possible under the present order of society.

They reminded the people of North Carolina that their State was one of the earliest in the South to move in the establishment of the higher education, and had come nearer an effective system of public schools in 1860 than any other State below its border. They rehearsed again the heroic fight of old Dr. Breckinridge for the preservation of the school funds of Kentucky, whereby the children of that Commonwealth are to-day enjoying increasing opportunities for free education. They recalled the repeated efforts in South Carolina and Louisiana to establish a working system of popular instruction; the setting apart of a magnificent land fund for the children by the wise founders of the Republic of Texas; the persistent labors of Governor Brown in Mississippi and of Lindsay and his associates in Tennessee to the same end. They did not forget how young Curry had labored in the legislature of his own State in similar fashion; and they told anew the story how the State superintendent of schools in Alabama, at the breaking out of the civil war, traveled and slept with the records of his office, as the old monk stood by his precious missal, through the dreary and dreadful days of the French Revolution, in the Cathedral of Rouen; and they did not forget that Baltimore, and Charleston, and New Orleans, and Louisville, and St. Louis, and other important cities had built up the common school before 1860.

They encouraged the republication, "with note and comment," of the

splendid appeals of Dr. Thornwell, of South Carolina; the eloquent and racy address of Governor Henry A. Wise, of Virginia; the prophetic report of Dr. Edward Joynes, in *The Last Days of the Confederacy*; and they pointed to the volumes of Southern legislative documents, appeals, resolutions, speeches, and sermons that of themselves constitute a copious educational literature during the years before the civil war out of which could be gathered to-day a library most valuable for the instruction and inspiration of the whole American people. And they understood why it was that all this did not eventuate in the establishment of the common school in the South before 1860, outside a few cities, and its partial adoption by three of the States.

They sympathized with the mass of the plain white people of the South, who for one hundred years had, in their own half-conscious and ineffectual way, pleaded for the better education of their children. They heard the loud cry, as from the depths, of the emancipated race for the Bible and the "blue-back spelling book" as the assurance of security and success for their new-found freedom.

Happily, out of the sore deprivation and mortal necessities of these States from 1866 to 1876 came the providential opportunity to originate the American common school. The old-time prosperous families could no longer educate their children in expensive private schools, send them abroad, or tutor them at home. All things in the South pointed to a new era in the education of the people. Dr. Sears reported, after his earliest visits, that he found a remarkable unanimity of feeling on the necessity of a new departure, and everywhere met the responsible class of people ready to be convinced. He had but little money to give, scarcely a third of the expense of establishing a school anywhere, and that only as a temporary subsidy. But at the end of eight years he reports a practical agreement among the influential classes of the Southern people to establish the common school as a perpetual and vital element in the State.

Every Commonwealth soon had a common-school organization, more or less effective. Two million children were enrolled in the new schools. Twenty-four cities and 200 villages, at first assisted by the fund, had soon been able to get on without it, and were supporting the graded system of public instruction free to all classes and both races. Included in this multitude were half a million of the children of the freedmen, for whom their white neighbors were and are still taxed, substantially to pay the cost of education. Never was there a more triumphant vindication of the wisdom of the policy of encouragement, inspiration, appeal to the higher public opinion of communities and States to wake out of their sleep and clothe themselves anew in the beautiful garments of intelligence, prosperity, and power, than this administration of the Peabody Education Fund, adhered to for thirty years, till, by the common consent of the educational public of the entire country, it is now recognized as the one safe and sure plan in "building for the children of the South."

And not only along these broad lines of educational policy, but in the method of using the gift at its disposal, did the Peabody board of trustees, from the first, under the acknowledged leadership of Mr. Winthrop, move on to a complete and unexampled success. The fate of large educational funds in all portions of our country during the past century has too often been a warning and a discouragement to the most generous giver. Large as it appeared, the entire gratuity of George Peabody was little more than the annual present school expenditure of the city of Boston, and barely half the educational budget of the New York and Chicago of today. How it was so managed that a sum as large as the original endowment has been already expended, while the original \$2,000,000 is still "in the bank," ready in two more years to be used in the endowment of such institutions as may best be entitled to it, is a lesson to all administrators of public or donated funds for the benefit of the children.

This policy finally included three separate and progressive steps. First, it demonstrated that in our country popular education is not best promoted by subsidizing a school "within an inch of its life," thus destroying all sense of personal and corporate responsibility and demoralizing childhood and youth by an indiscriminate and extravagant ministering to its wants. Every intelligent boy in an American common school knows that, at "one and twenty," he will be compelled, according to his means, to support and become responsible for the system of public education by which he is now receiving his best outfit for a successful life. In 1866 the Southern people still lingered too much in the old conceit that even in a Republic "taxation is tyranny." It would have been easy enough to demoralize these communities, even by an unwise distribution of the sums at the disposal of the Peabody trustees. So they struck the true American idea to show the people what could be done in the matter of public education, by well-placed specimens of good common schools at strategic educational centers; contributing for a brief period to their establishment and trusting to the common sense and practical energy of the people in due time, of themselves, to support their own system of instruction.

For twelve years this policy was followed, with remarkable discretion and astonishing success. In 1880, on my first visit to the South, I found these public schools everywhere acknowledged models and centers of light. Their boards of education were composed of the leading men of the community, who gave character to the movement and from the first assured its success. It would be impossible to make a Northern public fully understand the enthusiasm I witnessed in scores of villages and cities, extending to the "whole region round-about," awakened by the strange and beautiful spectacle of all the children "going to school together," instructed, disciplined, and interested in a way that had never been known before "in the memory of the oldest inhabitant." Of course, mistakes were made, and some of these ventures came to naught. But I am certain that no \$2,000,000

has ever been handled to better effect than this sum actually expended in the past twenty-eight years as the income of another \$2,000,000, in subsidizing the new common school of the South.

Nobody claims that this great good work was done without that hearty cooperation of the various forces essential to that style of achievement. It has been the work of the Southern educational public, aroused to its imperative needs, released at last from the dark curse that for two hundred years had bound these Commonwealths with a chain more grievous than the shackles of the slave, awakened to the natural activity and practical executive energy of every free and progressive Anglo-Saxon people. But no one agency has scored so deep a record in this splendid achievement as the work of the Peabody education fund, under the direction of its board of trustees, led by its devoted president; its decisions being enforced and often greatly determined by the wise counsel and admirable administration of its agents, themselves honorary members of the organization.

Then, as the desperate needs of the South in this respect became more and more evident, Dr. Sears urged the necessity of national aid to Southern education. A very able and conclusive report was made to the board by Hon. A. H. H. Stuart, of Virginia, as chairman of a committee of which Chief Justice Waite and William M. Evarts were the remaining members.

This report was indorsed and made the basis of a memorial to Congress, prepared by Dr. Curry, presented at three sessions, and enforced by him in public speeches, appearances before Congressional committees, and by that persistent lobbying for righteousness and humanity which is at the bottom of most of the good things done in public affairs. Mr. Winthrop espoused this idea with all his heart and soul and strength. For ten years he never failed to call attention to it in his annual address to the board, and this beneficent organization was one of the most influential of the numerous agencies enlisted in its behalf. Well did he say:

The welfare of our whole country is at stake in the education of its children. The free common schools are essential to any worthy or rightful citizenship of our Republic; illiteracy degrades the dignity of the elective franchise, and exposes it to unjust manipulation and suppression; universal suffrage is a farce, and may prove a tragedy without universal instruction; ignorance anywhere is danger everywhere; the safety of our institutions demands imperatively that every man who has a vote should be able to read it, and write and understand it; slavery is but half abolished, emancipation is but half completed, while millions of free men, with votes in their hands, are left without education.

First, under the lead of Hon. George F. Hoar, the House of Representatives, and afterwards the Senate of the United States, under the lead of the venerable Senator Justin S. Morrill, of Vermont, rose to the occasion. Finally, under the brave and persistent advocacy of Hon. Henry W. Blair, of New Hampshire, seconded by a noble demonstration in behalf of the common school by the most distinguished Senators

from the ex-Confederate States, in a debate beyond comparison the most memorable for broad and patriotic sentiment of any since the close of the civil war, the Senate, at three successive sessions of Congress, passed a bill that would have advanced the entire condition of affairs in the South twenty years. Oh, that Robert C. Winthrop had then, through one session, sat in the Speaker's chair of the National House of Representatives, to "pack" the Committee on Education and Labor and secure to its report in behalf of the children its "right of way" to an inevitable enactment into righteous and beneficent law!

But when that great hope expired the board of Peabody trustees unanimously agreed to concentrate the decreasing income of the fund, for several years not \$75,000 and at best rarely in excess of \$100,000 a year, to the training of teachers for the new schools of the South. For the past fifteen years this policy has been pursued. The Central Normal School, at Nashville, has been enlarged, reorganized, buttressed, and made strong to receive the final endowment that may make it the great central normal college of the South. In every Southern State at least one, and in several more than one, school of the sort has been subsidized, often called into existence, by the offer of aid for a succession of years. The old-time school institute, little more than a school-teacher's picnic framed in a narrow rim of miscellaneous public oratory, has evolved into a normal school and has now become a powerful agency, gathering every year the best teachers of the whole country to instruct, aid, and inspire the instructors in all varieties of schools.

In all these successive steps the Peabody fund has been a shining example of the true policy of the administration of public education in all parts of the Union. The people of the United States must learn to put their hands deep into their own pockets if they propose to keep abreast of the world's movement for the children. The state can do little more than supply a general organization of forces and agencies to aid the people in doing their own work. No bureaucratic system, such as prevails in the European continental nations, can take the place of our national method of training American children for good citizenship of the Republic we all pray these United States may become. It has been nothing short of a public blessing that this great "school committee" has, for now almost thirty years, shown the people of the South the straight gate and narrow way of self-help that alone leads to educational salvation. Through all these eventful years this association of wise men, under the leadership of Robert C. Winthrop, the foremost educational statesman of the land, has kept itself in constant cooperation with the public authorities of all the States that have received its aid. The moneys have been given directly to the State superintendents of schools and by them distributed under the well-understood conditions of the contributor. In this way it has so quietly instructed, as it has gone along with, the school authorities of cities and States that it has been a constant educator in public policy, always

adapting itself to the conditions of the schools. Even the two States that "in their haste" repudiated their own obligations in its hands have been received back to its favor and to-day are among the most enthusiastic of the entire group. In all things the Peabody Education Fund has illustrated the far-reaching and Christian policy of the Chief of the Apostles, "All things to all men, but one thing to" the children of the South.

For the results of this campaign of a generation under the generalship of Robert C. Winthrop we may refer to the annual reports of the Peabody board of trustees, now gathered up into a valuable series of volumes rich in historical interest. Enough to say that the imminent dangers to Southern education during the years from 1867 to 1880 were that the new movement for the common school would be "switched off" from the broad American to a narrow side track, or be "stamped out" during the bitter conflict over the readjustment of State indebtedness at the loud call for public economy raised by its enemies. We can see by what has already been shown how both these calamities were greatly averted by the presence on the ground of an organization representing the most distinguished men of both sections, absolutely committed to the whole American idea of popular education, ready to offer "material aid" on condition of continued exertion by the community or State that solicited its beneficence.

And it was a great point that at this emergency the general agent elected to fill the place of the lamented Dr. Sears was a man in whom the Southern people had absolute confidence, with whom no fault could be found, and while one of the most ardent and devoted laborers in the "lost cause" of the Confederacy, no man now excels him in his whole-souled consecration to the new order that came in at the close of the war. As the grandest ship laboring through overwhelming seas and buffeted by tempests steers right onward under the guidance of an invisible helm, so the Peabody Education Fund in this emergency was "the steering apparatus" of the new Southern common school.

Of course, all these efforts would have been useless had they not been everywhere heartily and persistently supported by the educational public of the South. In the final estimate of history it will be shown that the Southern people, led by their own educational public, during the past thirty years have done more in behalf of universal education than any people under similar circumstances since the world began.

It would be easy to crowd these pages with illustrations of the way in which the Peabody Education Fund, under the wise, powerful, and progressive administration of its president, became the golden hinge on which the front door of the Southern common school swung to and fro through all its early years of peril, until the later period of its assured self-support.

One of the first State superintendents of Southern schools in the

days of reconstruction to welcome the advent of Dr. Sears was Gen. John Eaton, then State commissioner of education in Tennessee. The subsequent promotion of this great and good friend of education to the post of United States Commissioner of Education, at Washington, by the man who best knew him, President Grant, was the assurance that the Peabody Education Fund would be henceforth the true yoke-fellow of this other child of the new Republic, the National Bureau of Education. From that day the Peabody fund has had no more effective ally than the National Bureau of Education, now grown from a little office, with an income of \$5,000, to a department of the Government in all but the name, known and honored at home and abroad. And nowhere are its merits more intelligently and warmly appreciated and its "aid and comfort" more often invoked than in the Southern States, where Winthrop and Sears and Curry have always felt its strong supporting hands under their arms.

I must also relate the most recent of the contrasts which make the history of this Republic for the past generation read like a romance. In the year 1845 no man on the floor of Congress argued more powerfully, with more prophetic eloquence, against the proposed admission of Texas to the Union, on the ground of the danger of increasing the area of negro slavery, than Robert C. Winthrop, representing the city of Boston. Texas was admitted to the Union, and the great conflict of sections, foretold by Channing and Webster and Winthrop, came, as predicted. But fifty years later the association of teachers, representing the common schools of new Texas, no longer a "Lone Star," but one of the most hopeful of the new planets that have "sailed into the ken" of the patriotic eye in the firmament of the Union, assembled at Galveston, received with an enthusiastic welcome Dr. William T. Harris, the distinguished United States Commissioner of Education, and, by a unanimous rising vote, adopted this resolution:

Whereas the sad intelligence has reached us of the death of that scholar and statesman, patriot and philanthropist, the Hon. Robert C. Winthrop, the last of a historic family that connects our present generation with the liberty-loving fathers of 1620; and

Whereas it seems meet that we of the South should feel more than an ordinary interest in the life and death of this great and good man, who for twenty-eight years, as chairman of the Peabody Educational Fund, has contributed his wise and great administrative ability in judiciously directing the disbursements of the princely provision of Mr. George Peabody for the education of the children of the South, and at a time when war had desolated our fair land and destroyed every means for the instruction of the masses, as the personal and true friend of Mr. Peabody, was the first to whom he made known his noble purpose—the gift of so large an amount that the available fund accruing from it has reached in the aggregate over \$2,250,000 in aid of existing or in establishing other schools; and

Whereas in the administration of this fund our people have been taught the invaluable lesson that that is the greatest help that helps one to help himself: Therefore, be it

Resolved, That in the death of the Hon. Robert C. Winthrop philanthropy has lost its most liberal contributor, patriotism its strongest advocate, statesmanship its

brightest example, republican institutions their bravest defender, and while the whole country has sustained an irreparable loss, the South especially has lost at this time its truest and most sympathetic friend—the director and dispenser of the largest single benefaction in its far-reaching results ever bequeathed to any people by any one individual.

One of the most interesting of all the tributes is that of Governor B. R. Tillman, of South Carolina, at the laying of the corner stone of the Winthrop Normal and Industrial College for Young White Women, on May 12, 1894, at Rock Hill in that State. Thirteen years ago, in 1881, I first visited South Carolina and, under the courteous guidance of its accomplished State superintendent of education, afterwards governor, Hugh S. Thompson, was introduced to a large portion of its territory. At that time the capital city, Columbia, had no reliable system of public instruction; indeed, the people had refused to vote the taxation necessary to establish one the day before I reached the place. But in the following year the old university town thought better of it, took up the enterprise in a decided and liberal fashion, and placed at the head of its new graded schools for both races Mr. D. B. Johnson, one of the most promising of the young Southern superintendents of schools I had met in my previous visit to North Carolina.

One summer day in 1886 I introduced Mr. Johnson to Mr. Winthrop, in his beautiful home at Brookline. The young superintendent told his story and asked for the consideration of his favorite project, the establishment of a city training school for teachers, by the Peabody trustees. As if by instinct, Mr. Winthrop responded to the plea. A grant of \$2,000 was made, and when I next visited Columbia I found the Winthrop training school for teachers in full operation, under the close and affectionate observation of the president of the Peabody board, as if the favored child of his old age. In due time this excellent school, in whose instruction Northern and Southern teachers were employed, was adopted by the State, which gave to it the first money ever voted by a South Carolina legislature for the higher education of women, and made it practically a State institution.

On the 12th of May, 1894, one of the largest assemblies ever gathered in the Palmetto State on an educational occasion swarmed the enterprising new village of Rock Hill, up in the northwest, to lay the corner stone of one of the noblest school buildings in the South. The new institution is named "The Winthrop Normal and Industrial College." Governor Tillman in his address declared:

I know you will all unite with me in the prayer that this grand, good old man may be spared at least to see the fruition of our hopes in the assembling within these walls of the 600 South Carolina girls for whom we are preparing. *This school is the one thing and the only thing upon which the men of South Carolina are at present united.* May this point of union grow and spread, that the inspirations of this day may prove a harbinger and help to hasten the restoration of that harmony and friendly feeling which once existed and which must necessarily return before we can have any great degree of prosperity.

Henceforth the name of Robert C. Winthrop is associated with the

public higher education of the women of South Carolina. No more heartfelt tribute has been rendered to his memory than in the resolutions passed by the girls of the Winthrop Normal School, and his birthday is a holiday in the institution. And if it be, as some of our foreign-born citizens declare, a greater honor to be adopted by an American Commonwealth than to become a citizen by the accident of birth, Mr. Winthrop might well congratulate himself that, failing to be born a citizen of South Carolina in the old contentious days "before the flood," the day of his adoption was reserved for the happier time when this proud old State has on her hands no contention outside her own borders; while the name of this son of Massachusetts is now quoted as the "harbinger and help" in the present unfortunate era of domestic distraction; and over his portrait, wreathed in roses and clematis on every birthday by the young women of South Carolina, may be written again, as on the tablet above the tomb of his ancestors in Groton Church, England, "Blessed are the peacemakers, for they shall be called the children of God."

It was a hope expressed by George Peabody that while his own gift should be used for the schooling of the masses in the elementary education in which the South up to 1860 had been so deficient, other men would follow his example and give of the abundance of their substance for the rehabilitation of the secondary and higher education of both races and all classes in all these States. This hope has been realized, and since the memorable October day when this "great citizen of the world and brother of mankind" unloaded his leathern wallet under the portrait of Benjamin Franklin before Robert C. Winthrop more than \$10,000,000 has been donated for this end in the South; the larger part by Southern men and women, or by men who, like George Peabody, had become citizens of that section and remembered it when they "came into their kingdom" of great wealth;—Cornelius Vanderbilt and Johns Hopkins and Enoch Pratt; Paul Tulane and Mrs. Newcome and Miss Howard; Corcoran and McCormick and Ball and Rosenberg; Thomas and Hawkins; Fayerweather and Rockefeller and Dupont; Mrs. Stone and Slater and Hand; McMillan and good Mary Hemenway; and, perhaps least known of all, Austin of Boston, who, in fond remembrance of Thomas Jefferson, the political idol of his youth, named the University of Virginia the residuary legatee of his estate, said to be the largest private gift ever made to the child of Jefferson's old age; Clemson of South Carolina and Miller of Virginia, who by large benefactions have inaugurated industrial education in noble foundations in both those States. These, with a great multitude of donors of smaller sums, but with equal consecration, have taken the little children and the dear boys and girls of the Southland into their arms and blessed them in the most practical and Christian way, by "helping them to help themselves" in the race for good manhood and womanhood and good American citizenship.

And in this roll of honor, among the most honorable, will abide the many hundreds of devoted men and women from the north country and the Canadas who have given years of self-sacrificing toil, and so often their lives, to the service of the children and youth of both races in these schools. How far the prodigious activity of all the Northern churches for the schooling of the freedmen in the South has been stimulated by George Peabody's original gift can not be known. But it is certain that all these movements have been held in close and fraternal sympathy with the Peabody education fund, and, perhaps, by its influence kept in closer touch with the central educational reliance of the South—the common school.

I heard Richard Cobden declare, almost forty years ago, before the teachers and pupils of Dr. Eben Stearns's Albany (N. Y.) Female Academy, that one of the most prominent characteristics of American society he had observed was that while the first notion of a man with a new fortune in England was to "found a family," the American millionaire seemed interested to found a great school, a hospital, a library, or some institution or agency of large public utility. "And this," continued Mr. Cobden, "shows me that you are a more civilized people than we." If that were true forty years ago, it may be that the example of George Peabody in London, that made his name a household word in every English home, was influential in giving an impulse to the present era of splendid educational gifts, and the recent movements for popular education in Great Britain. So does the life of one good man, fitly placed, like a tall, central light-house, illuminate all nations and shoot broad gleams of radiance athwart the clouds and storms of history, a blessed response to the song of the angels over the cradle at Bethlehem: "Glory to God in the highest, and on earth peace, good will toward men."

There is small need of dwelling upon the personal character, gifts, and graces of this admirable man, Robert C. Winthrop, who, in a way so gracious and so beneficent, united the passing and coming social order, blending the old and new ideal of the true Christian gentleman and citizen in a fashion so complete that we know not which most to admire. It was permitted to George Peabody to live through the earliest years of the administration of his great educational charity, and die full in the faith that it was in the hands of those who would do their uttermost to make it a blessing to the nation and the people he loved so well. To Mr. Winthrop was granted an extension of years, in which the disappointments and hostilities of his early public manhood were outlived to enjoy the growing happiness of another youth, blessed by the love of myriads of children and the gathering reverence and gratitude of all wise and good men in the Republic.

But this life, so rich in the record of all these years, was not to close without a final "all hail" to the future. His last published address, read at the meeting of the Peabody trustees October 4, 1894, contains

a whole-souled welcome to the coming era of the higher education of American young women. At the conclusion of a mention of the recent ceremony of laying the corner stone of the Winthrop Normal and Industrial College of South Carolina, which the Peabody fund had assisted in its opening as the Columbia City Training School for Teachers, he writes: "An article in the August number of the New England Magazine says that 'the history of the higher education of women covers barely a century. The Harvard annex and coeducation in the universities form what one would call the brilliant close, except that in human progress there is no close; it is a story without an end.' But surely," added Mr. Winthrop, "South Carolina is not to be omitted from having made one of the most important and conspicuous contributions to this 'brilliant close,' if so it is to be called, as we by no means agree. The higher education of woman and her contribution to the education of the country are only in the beginning, and their results remain to be developed. South Carolina may well be proud of the part she is taking in a cause which can have no close in our day and generation." Here is the true culmination of the career of this illustrious educational statesman, who with a firm grasp held on to all that is really precious and abiding in the past, while his dying eyes, through the mist of approaching death, were lifted toward the morning, radiant with the splendor of the "dayspring from on high."

No tribute remains to be paid to the name and fame of George Peabody, unless the repeated suggestion of Dr. Curry that the Southern States aided by his fund unite to place his statue in the national capital. But how can we best commemorate the name and fame of Robert C. Winthrop, foremost of American educational statesmen, the friend of Peabody—two men who loved each other in life, and in their death were not divided? Statue and portrait and memorial address and celebrations of his birthday and, in due time, his biography will follow, as in a solemn and grateful procession of national remembrance. But there yet seems to be one method so appropriate that it should commend itself to the educational public of the whole country.

On my own last visit to Mr. Winthrop, more than a year ago, at his home in Boston, I was impressed with the fact remarked upon by Bishop Lawrence, at the commemorative service of the Massachusetts Historical Society, of his effort, through the growing weariness and infirmity of age, to maintain to the last the beautiful courtesy that was so marked a feature of his splendid manhood. He came into the room, aided by his faithful manservant, really too ill to receive anybody so little a familiar acquaintance as myself. In the half hour he was able to give me I spoke of what has more and more forced itself upon my attention as the year of the final distribution of the Peabody fund of \$2,000,000 approaches—the feeling that this unique central educational organization should not be dissolved, and that in no way could the cause of Southern education in the generation to come be so ad-

vanced as by a new gift of other millions to carry on the work after the original fund has been depleted, as proposed by its donor. He rallied at the mention of the idea with the momentary enthusiasm of youth; indeed, so heartily that he seemed almost overcome by the proposition, and could only respond in a few almost wandering sentences. On the following day I received a letter from him containing an almost pathetic regret at his own apparent indifference to my proposition the day before; but urging me, by all the influence I possessed as a laborer in the cause of Southern education, to publish everywhere my conviction of the great need, with his own full indorsement.

Now, as never before, does this idea rise up as the fit close of the present tribute to the lives and united services of George Peabody and Robert C. Winthrop. Never was a louder call for a new departure in this great central ministry of education than now. Two broad avenues of advance lie open before us.

(1) The State of Mississippi has led the way in what may become a reconciliation. The election laws of Massachusetts and other New England States have recently been incorporated in the new constitution of this Southern State to the extent of providing for an educational qualification for the suffrage, or a fair understanding of the constitution of the State. While I write, the word comes that the leading colored men of an important section of Mississippi have formed a league to promote the education of their people, especially for the duties of civic life. No American State will long desire or dare to suppress the vote of any class of citizens as well qualified to assume the sacred responsibilities of the ballot and the jury box as the colored youth of all our States may become by a new and vigorous campaign of education through another generation.

(2) And now comes a new summons, from the white people of the mountain country of the old South—the magnificent Appalachian region, extending through eight States, as extensive as the German Empire, and declared by experts in all ways, save its distance from the seaboard, as rich in natural resources—to give to their 2,000,000 of people the bread and water of that education which may be the sole outfit of their children for success in life and good American citizenship.

Why should this “great American academy” disband in the face of such an opportunity as this? The dedication of a new Winthrop educational benefaction, to supplement the Peabody Education Fund, would be a fit tribute to him who was beloved in life and “not divided in death” from his great and good compeer. Let the new wealth of the South unite with the vast opulence of the old East and the rising generosity of the mighty West to raise this monument to the man we commemorate.

And, in the reorganization of this larger Peabody-Winthrop educational fund, let it not be forgotten what has been done in the past thirty years by the noble women of the South and the North, the East and

the West, for the uplifting of the children and youth and, through them, for the advancement of the Republic. Let this most characteristic and prophetic movement for the higher and broader education of American women be recognized by including in the management of this greater fund a fit representation of the foremost educational womanhood of the country; a just tribute to the great service of the daughters of the Republic in that cause of human enlargement, of which "there is no close," this wondrous "story without an end."

And thus may the inspiring words of the orator of the Yorktown Centennial celebration, standing almost in sight of the beach where the first shipload of Englishmen landed almost three centuries ago, be lifted from eloquent prophecy to practical fruition. Speaking of the Peabody Education Fund, Mr. Winthrop there said:

It has been thus far as a voice crying in the wilderness—calling the people of the South to undertake the great work for themselves, and preparing the way for its successful prosecution. It may be looked back upon, one of these days, if not now, as "the little leaven which has leavened the whole lump." But the whole lump must be kneaded and molded and worked over, with unceasing activity and energy, by every town, village, and district for itself, or there will be no sufficient bread for the hungry and famished masses. And there must be aids and appropriations and endowments, by cities and States, and by the nation at large through its public lands, if in no other way, and to an amount compared with which the gift of George Peabody—munificent as it was for an individual benefaction—is but the small dust of the balance.

Then, rising to his mighty theme, he said:

It is one of the great rights of a free people to be educated and trained up from childhood to that ability to govern themselves which is the largest element in republican self-government. It is primarily a right of our children, and they are not able to enforce and vindicate it for themselves. But let us beware of subjecting ourselves to the ineffable reproach of robbing the children of their bread and casting it before dogs, by wasting untold millions on corrupt and extravagant projects, and starving our common schools. The whole field of our Union is now open to education, and the whole field of the Union must be occupied. This Government must stand or fall with free schools. These and these alone can supply the firm foundation, and that foundation must, at this very moment, be extended and strengthened and rendered immovable and indestructible.

CHAPTER XVIII.

NAME REGISTER.¹

I.—CHIEF STATE SCHOOL OFFICERS.

Name.	Address.	Official designation.
John O. Turner	Montgomery, Ala.	State superintendent of education.
Sheldon Jackson	Sitka, Alaska	General agent of education.
F. J. Netherton	Phoenix, Ariz.	Superintendent of public instruction.
Junius Jordan	Little Rock, Ark.	State superintendent of public instruction.
Samuel T. Black	Sacramento, Cal.	Do.
Mrs. A. J. Peavey	Denver, Colo.	Do.
C. D. Hine	Hartford, Conn.	Secretary of State board of education.
.....	Dover, Del.	Do.
W. B. Powell	Washington, D. C.	Superintendent of District schools.
W. N. Sheats	Tallahassee, Fla.	State superintendent of public instruction.
Gustavus R. Glenn	Atlanta, Ga.	State school commissioner.
C. A. Forseman	Boise, Idaho	State superintendent of public instruction.
Samuel M. Inglis	Springfield, Ill.	Do.
D. M. Geating	Indianapolis, Ind.	Do.
Henry Sabin	Des Moines, Iowa	Do.
Edmund Stanley	Topeka, Kans.	Do.
W. J. Davidson	Frankfort, Ky.	Do.
A. D. Lafargue	Baton Rouge, La.	State superintendent of education.
W. W. Stetson	Augusta, Me.	State superintendent of common schools.
E. R. Prettyman	Baltimore, Md.	State superintendent of public instruction.
Frank A. Hill	Boston, Mass.	Secretary of State board of education.
Henry R. Pattengill	Lansing, Mich.	State superintendent of public instruction.
W. W. Pendergast	St. Paul, Minn.	Do.
A. A. Kincannon	Jackson, Miss.	State superintendent of education.
John R. Kirk	Jefferson City, Mo.	State superintendent of public schools.
E. A. Steere	Helena, Mont.	State superintendent of public instruction.
H. R. Corbett	Lincoln, Nebr.	Do.
H. C. Cutting	Carson City, Nev.	Do.
Fred. Gowing	Concord, N. H.	Do.
A. B. Poland	Trenton, N. J.	Do.
Amado Chaves	Santa Fe, N. Mex.	Superintendent of public instruction.
Charles R. Skinner	Albany, N. Y.	State superintendent of public instruction.
John C. Scarborough	Raleigh, N. C.	Do.
Miss Emma F. Bates	Bismarck, N. Dak.	Do.
Oscar T. Corson	Columbus, Ohio	State commissioner of common schools.
E. D. Cameron	Guthrie, Okla.	Superintendent of public instruction.
G. M. Irwin	Salem, Oreg.	State superintendent of public instruction.
Nathan C. Schaeffer	Harrisburg, Pa.	Do.
Thomas B. Stockwell	Providence, R. I.	Commissioner of public schools.
W. D. Mayfield	Columbia, S. C.	State superintendent of education.
Frank Crane	Pierre, S. Dak.	State superintendent of public instruction.
S. S. Gilbreath	Nashville, Tenn.	State superintendent of public schools.
J. M. Carlisle	Austin, Tex.	State superintendent of public instruction.
John R. Park	Salt Lake City, Utah.	Do.
Mason S. Stone	Montpelier, Vt.	State superintendent of education.
John E. Massey	Richmond, Va.	State superintendent of public instruction.
C. W. Bean	Olympia, Wash.	Do.
Virgil A. Lewis	Charleston, W. Va.	State superintendent of free schools.
J. Q. Emery	Madison, Wis.	State superintendent of public schools.
Miss Estelle Reel	Cheyenne, Wyo.	State superintendent of public instruction.

II.—LIST OF CITY SUPERINTENDENTS.

ALABAMA.

Anniston, H. C. Gunnels.¹
 Bessemer, G. M. Lovejoy.
 Birmingham, J. H. Phillips.
 Enfaula, F. L. McCoy.
 Florence, H. C. Gilbert.

Huntsville, Sydney J. Mayhew.
 Mobile, John D. Yerby.
 Montgomery, C. L. Floyd.
 Selma, R. E. Hardaway.
 Tuscaloosa, James H. Foster.

¹ Including all changes reported to the Bureau up to January, 1896.

II—LIST OF CITY SUPERINTENDENTS—Continued.

ARIZONA.

Tucson, ———.

ARKANSAS.

Fort Smith, J. L. Holloway.
 Helena, W. W. Rivers.
 Hot Springs, G. B. Cook.

Little Rock, J. R. Rightsell.
 Pine Bluff, Mrs. Ruth McBride.

CALIFORNIA.

Alameda, D. J. Sullivan.
 Berkeley, S. D. Waterman.
 Eureka, G. W. Warren.
 Fresno, T. L. Heaton.
 Los Angeles, J. A. Forshay.
 Napa City, J. L. Shearer.¹
 Oakland, J. W. McClymonds.
 Pasadena, James D. Graham.
 Riverside, Eugene Fuller.¹
 Sacramento, O. W. Erlewine.

San Bernardino, W. Scott Thomas.
 San Diego, Eugene De Burn.
 San Francisco, Madison Babcock.
 San Jose, J. H. Freeman.
 Santa Barbara, C. Y. Roop.
 Santa Cruz, D. C. Clark.
 Santa Rosa, E. W. Davis.
 Stockton, James A. Barr.
 Vallejo, L. G. Harrier.

COLORADO.

Aspen, F. H. Clark.
 Colorado Springs, P. K. Pattison.
 Denver: District No. 1, Aaron Gore.
 District No. 2, L. C. Greenlee.
 District No. 17, J. H. Van Sickle.

Leadville, J. P. Jackson.
 Pueblo: District No. 1, James S. McClung.
 District No. 20, H. E. Robbins.
 Trinidad, Eugene C. Stevens.

CONNECTICUT.

Ansonia, W. H. Angleton.
 Derby, J. W. Peck.
 Bridgeport, Charles W. Deane.
 Bristol, James P. Williams.
 Danbury, A. C. Hubbard.²
 Enfield, James B. Houston.²
 Greenwich, George P. Fisher.
 Hartford, Andrew P. Gates.
 Manchester, Robert P. Bissell.
 Meriden, J. T. Pettes.
 Middletown, Walter B. Ferguson.
 New Britain, J. N. Bartlett.

New Haven, ———.
 New London, Charles B. Jennings.⁴
 Norwalk, Charles Olmstead.²
 Norwich, N. L. Bishop.
 Rockville, I. M. Agard.
 Stamford, Everett C. Willard.
 Torrington, Edwin H. Forbes.
 Wallingford, Daniel R. Knight.
 Waterbury, M. S. Crosby.
 Winchester, George F. Prentiss.²
 Windham, George L. Storrs.⁴

DELAWARE.

New Castle, Allen H. Knapp.

Wilmington, David W. Harlan.

DISTRICT OF COLUMBIA.

Washington, William B. Powell, superintendent of public schools.

Washington, G. F. T. Cook, superintendent of colored schools.

FLORIDA.

Jacksonville, Joel D. Mead.⁴
 Key West, C. F. Kemp.⁶
 Pensacola, N. B. Cook.⁶

St. Augustine, Walter E. Knibloe.
 Tampa, L. W. Buchholz.⁴

GEORGIA.

Albany, E. G. Jones.
 Americus, William Harper.
 Athens, G. G. Bond.
 Atlanta, W. F. Slaron.
 Augusta, Lawton B. Evans.
 Brunswick, A. L. Franklin.

Columbus, Homer Wright.
 Griffin, J. Henry Walker.
 Macou, D. Q. Abbott.
 Rome, James C. Harris.
 Savannah, W. H. Baker.
 Thomasville, K. T. MacLean.⁶

ILLINOIS.

Alton, Robert A. Haight.
 Aurora: District No. 5 (East Side), J. H. Freeman.
 District No. 4 (West Side), A. V. Greenman.
 Austin, Newell D. Gilbert.
 Beardstown, M. Moore.
 Belleville, H. D. Updike.
 Bloomington, E. M. Van Petten.

Braidwood, C. F. Van Doren.
 Cairo, Taylor C. Clendenen.
 Canton, C. M. Bardwell.
 Centralia, D. W. Creekmur.
 Champaign, C. A. Bowsher.
 Charleston, J. W. Henninger.
 Chicago, Albert G. Lane.
 Danville, Joseph Carter.

¹ Principal.² Secretary of the board of school visitors.³ Secretary of the board of school visitors; post-office, Thompsonville.⁴ Acting school visitor.⁵ Post-office, Willimantic.⁶ County superintendent.

II.—LIST OF CITY SUPERINTENDENTS—Continued.

ILLINOIS—Continued.

Decatur, Enoch A. Gastman.
 Dixon, William Jenkins.
 Duquoin, J. E. Wooters.
 East St. Louis: District No. 1, James P. Slade.
 District No. 2, range 10, T. J. McDonough.¹
 District No. 2, range 9, I. Harry Todd.¹
 Elgin, Eugene A. Mead.
 Evanston: District No. 1, Homer H. Kingsley.
 District No. 2, South Evanston, F. W. Nichols.
 District No. 3, North Evanston, Arthur J. Snyder.
 Freeport, R. S. Page.
 Galena, I. C. Baker.
 Galesburg, William L. Steele.
 Jacksonville, David T. Harris.
 Joliet, W. H. Campbell.
 Kankakee, F. N. Tracy.
 Kewanee, A. C. Butler.
 La Salle, L. A. Thomas.
 Lincoln, _____.

Litchfield, J. E. Bryan.
 Macomb, S. F. Hall.
 Mattoon, B. F. Armitage.
 Moline, H. M. Slauson.
 Monmouth, James C. Burns.
 Oak Park, W. H. Hatch.
 Ottawa, Samuel H. Heidler.
 Pana: West Side and South Side, L. S. Ham.²
 East Side, W. T. Gooden.²
 Paris, W. W. Black.
 Pekin, J. Alva Hornberger.
 Peoria, Newton Charles Dougherty.
 Peru, Fred W. Smedley.
 Quincy, T. W. Macfall.
 Rock Island, S. S. Kemble.
 Rockford, P. R. Walker.
 Springfield, J. H. Collins.
 Sterling: District No. 1, W. T. Tuttle.
 District No. 8, S. B. Hurst.
 District No. 3, H. L. Chaplin.
 Streator, J. N. Patrick.
 Waukegan, Frank H. Hall.

INDIANA.

Anderson, John W. Carr.
 Bloomington, W. H. Fertich.
 Brazil, John C. Gregg.
 Columbus, J. A. Carnagey.
 Connersville, W. F. L. Sanders.
 Crawfordsville, Isaac M. Wellington.
 Elkhart, D. W. Thomas.
 Evansville, William A. Heister.
 Fort Wayne, John S. Irwin.
 Frankfort, Benjamin F. Moore.
 Goshen, William H. Sims.
 Greencastle, Robert A. Ogg.
 Hammond, W. C. Belman.
 Huntington, Robert I. Hamilton.
 Indianapolis, David K. Goss.
 Jeffersonville, P. P. Stultz.
 Kokomo, Horace G. Woody.
 Lafayette, Edward Ayres.
 Laporte, James F. Knight.

Lawrenceburg, G. D. Knapp.
 Logansport, Albert H. Douglass.
 Madison, Thomas A. Mott.
 Marion, Wellford D. Weaver.
 Michigan City, Edward Boyle.
 Mount Vernon, Edwin S. Monroe.
 Muncie, W. R. Snyder.
 New Albany, W. H. Hershman.
 Peru, W. R. J. Stratford.
 Richmond, Justin N. Study.
 Seymour, H. C. Montgomery.
 Shelbyville, James H. Tomlin.
 South Bend, Calvin Moon.
 Terre Haute, William H. Wiley.
 Valparaiso, Charles Henderson Wood.
 Vincennes, Albert E. Humke.
 Wabash, M. W. Harrison.
 Washington, William F. Axtell.

IOWA.

Atlantic, H. G. Lamsen.
 Boone, George I. Miller.
 Burlington, Charles Eldred Shelton.
 Cedar Rapids, J. F. Merrill.
 Clinton, O. P. Bostwick.
 Council Bluffs, Hugh W. Sawyer.
 Creston, O. E. French.
 Davenport, J. B. Young.
 Des Moines: East Side, Amos Hatt.
 West Side, Frank B. Cooper.
 North Side, O. E. Smith.
 Dubuque, F. T. Oldt.
 Fort Dodge, F. C. Wildes.

Fort Madison, C. H. Morrill.
 Iowa City, W. F. Cramer.
 Keokuk, O. W. Weyer.
 Le Mars, E. N. Coleman.
 Lyons, J. H. Breese.
 Marshalltown, C. P. Rogers.
 Mason City, A. R. Sale.
 Muscatine, F. M. Witter.
 Oskaloosa, Orion C. Scott.
 Ottumwa, A. W. Stuart.
 Sioux City, H. E. Kratz.
 Waterloo: East Side, F. J. Sessions.
 West Side, George A. Bateman.

KANSAS.

Argentine, Charles R. Sortor.
 Arkansas City, T. W. Conway.
 Atchison, J. H. Gletfelter.
 Emporia, John Dietrich.
 Fort Scott, David M. Bowen.
 Hutchinson, George W. Winans.
 Junction City, George W. Kendrick.
 Kansas City, Larkin L. L. Hanks.
 Lawrence, Frank P. Smith.
 Leavenworth, James E. Klock.

Newton, J. W. Cooper.
 Ottawa, William M. Sinclair.
 Parsons, S. D. Frazier.
 Pittsburg, S. W. Black.
 Salina, _____.
 Topeka, William M. Davidson.
 Wellington, H. F. M. Bear.
 Wichita, Frank R. Dyer.
 Winfield, J. W. Spindler.

KENTUCKY.

Ashland, John G. Crabbe.
 Bowling Green, Edward Taylor.
 Covington, _____.
 Dayton, R. M. Mitchell.
 Frankfort, McHenry Rhoads.
 Henderson, Edward S. Clark.
 Hopkinsville, Livingstone McCartney.
 Lexington, William Rogers Clay.

Louisville, E. H. Mack.
 Maysville, J. H. Blatterman.
 Newport, John Burke.
 Owensboro, James McGinniss.
 Paducah, George O. McBroom.
 Paris, E. W. Weaver.
 Richmond, _____ Clark.
 Winchester, A. C. Fleshaman.

¹ Principal.² Supervising principal.

II.—LIST OF CITY SUPERINTENDENTS—Continued.

LOUISIANA.

Baton Rouge, Fred. J. Tunnard.¹
New Orleans, Warren Easton.

Shreveport, John L. Hargrove.

MAINE.

Auburn, A. P. Wagg.
Augusta, J. M. Wyman.
Bangor, Miss Mary S. Snow.
Bath, J. C. Phillips.
Belfast, Osmen C. Evans.
Biddeford, Royal E. Gould.
Brewer, George Curtis.²
Calais, S. E. Webber.

Ellsworth, E. W. Lord.
Gardiner, James M. Larrabee.³
Lewiston, W. W. Stetson.
Portland, Orlando M. Lord.
Rockland, John R. Dunton.
Saco, John S. Locke.
Waterville, J. H. Blanchard.³

MARYLAND.

Annapolis, John G. Bannon.⁴
Baltimore, Henry A. Wise.
Cambridge, James L. Bryan.⁴

Cumberland, H. G. Welmer.⁴
Frederick, Ephraim L. Boblitz.⁴
Hagerstown, George C. Pearson.⁴

MASSACHUSETTS.

Adams, Walter P. Beckwith.
Amesbury, E. O. Perkins.⁵
Attleboro, J. O. Tiffany.
Beverly, Adelbert Leon Safford.
Boston, Edwin P. Seaver.
Brockton, B. B. Russell.
Brookline, Samuel T. Dutton.
Cambridge, Francis Cogswell.
Chelsea, Eben H. Davis.
Chicopee, G. A. Stuart.
Clinton, Charles L. Hunt.
Danvers, W. A. Baldwin.
Dedham, Roderick Whittlesey Hine.
Everett, Randall J. Condon.
Fall River, William C. Bates.
Fitchburg, Joseph G. Edgerley.
Framingham, Orville W. Collins.
Gardner, Louis P. Nash.
Gloucester, Freeman Putney.
Haverhill, Albert L. Bartlett.
Holyoke, Edwin L. Kirtland.
Hyde Park, Richard M. Johnson.⁶
Lawrence, John E. Burke.
Lowell, Arthur K. Whitcomb.
Lynn, Orasmus B. Bruce.
Malden, Charles A. Daniels.
Marblehead, Henry M. Walradt.

Marlboro, B. W. Tinker.
Medford, Charles H. Moras.
Melrose, Benjamin F. Robinson.
Milford, S. F. Blodgett.
Natick, Frank Edson Parlin.
New Bedford, William E. Hatch.
Newburyport, William P. Lunt.
Newton, George I. Aldrich.
North Adams, I. Freeman Hall.
Northampton, Alvin F. Pease.
Peabody, John B. Gifford.
Pittsfield, Eugene Bouten.
Plymouth, Francis J. Heavens.
Quincy, H. W. Lull.
Salem, John W. Perkins.
Somerville, Gordon A. Southworth.
Southbridge, John T. Clarke.
Spencer, Wyman C. Fickett.
Springfield, Thomas M. Balliet.
Stoneham, C. E. Stevens.
Taunton, C. F. Boyden.
Waltham, Henry Whittemore.
Watertown, George R. Dwelley.
Westfield, G. H. Danforth.
Weymouth, I. M. Norcross.
Woburn, Thomas Emerson.
Worcester, Clarence F. Carroll.

MICHIGAN.

Adrian, George W. Walker.
Alpena, L. S. Norton.
Ann Arbor, Walter S. Perry.
Au Sable, C. M. Jansky.
Battle Creek, F. W. Arbury.
Bay City, John A. Stewart.
Big Rapids, James R. Miller.
Cadillac, George R. Catton.
Cheboygan, William C. Thompson.
Coldwater, Egbert L. Briggs.
Detroit, W. E. Robinson.
Escanaba, S. Sterrett Beggs.
Flint, F. R. Hathaway.
Grand Haven, Joseph B. Estabrook.
Grand Rapids, W. W. Chalmers.
Ionia, C. L. Bemis.
Iron Mountain, T. W. Paton.
Ironwood, L. L. Wright.
Jaspeming, Richard Hardy.
Jackson: District No. 1, Thomas L. Evans.
District No. 17, Martin L. Palmer.

Kalamazoo, O. E. Latham.
Lansing, Charles O. Hoyt.
Ludington, H. T. Blodgett.
Manistee, Albert Jennings.
Marquette, Anna M. Chandler.
Menominee, O. L. Woodley.
Monroe, A. W. Tressler.
Mount Clemens, S. C. Price.
Muskegon, David Mackenzie.
Negaunee, F. D. Davis.
Niles, J. D. Schiller.
Owosso, J. W. Simmons.
Pontiac, F. E. Converse.
Port Huron, James H. Beazell.
Saginaw: East Side, A. S. Whitney.
West Side, Edwin C. Thompson.
Sault Ste. Marie, E. E. Ferguson.
Traverse City, Charles T. Grawn.
West Bay City, H. H. Frost.
Ypsilanti, M. A. Whitney.

MINNESOTA.

Anoka, Zenas N. Vaughn.
Brainerd, B. T. Hathaway.
Duluth, Robert E. Denfeld.
Faribault, George A. Franklin.
Mankato, George F. Kenaston.
Minneapolis, C. M. Jordan.

Red Wing, G. V. Brahough.
Rochester, F. D. Budlong.
St. Cloud, S. S. Parr.
St. Paul, Charles B. Gilbert.
Stillwater, Frank A. Weld.
Winona, Buel T. Davis.

¹ Parish superintendent.
² Supervisor.
³ Principal of the high school.

⁴ County school examiner.
⁵ Secretary of the school committee.

II.—LIST OF CITY SUPERINTENDENTS—Continued.

MISSISSIPPI.

Columbus, J. M. Barrow.
Greenville, E. E. Bass.
Jackson, J. C. Hardy.

Meridian, J. G. Deupree.
Natchez, J. W. Henderson.
Vicksburg, Charles Pendleton Kemper.

MISSOURI.

Boonville, F. W. Ploger.
Brookfield, L. A. Wirick.
Capo Girardeau, T. E. Joyce.
Carthage, J. M. White.
Chillicothe, W. F. Jamison.
Clinton, Charles B. Reynolds.
Columbia, R. H. Emberson.
Fulton, John P. Goss.
Hannibal, R. B. D. Simonson.
Independence, William F. Bahlmann.
Jefferson City, J. U. White.
Joplin, W. B. Brown.
Kansas City, James M. Greenwood.
Lexington, H. D. Demand.
Louisiana, A. P. Settle.

Marshall, ———.
Maryville, A. F. Clarendon.
Mexico, D. A. McMillan.
Moberly, J. A. Whiteford.
Nevada, W. J. Hawkins.
Rich Hill, John P. Thurman.
St. Charles, George W. Jones.
St. Joseph, Edward B. Neely.
St. Louis, F. Louis Soldan.
Sedalia, George V. Buchanan.
Springfield, Jonathan Fairbanks.
Trenton, H. E. Du Bois.
Warrensburg, F. E. Holiday.
Webb City, A. G. Young.

MONTANA.

Butte City, F. L. Kern.

Helena, Robert G. Young.

NEBRASKA.

Beatrice, W. H. Beeler.
Fremont, Daniel Miller.
Grand Island, Robert J. Barr.
Hastings, Edwin N. Brown.
Kearney, Jesse T. Morey.

Lincoln, Frank Strong.
Nebraska City, W. H. Skinner.
Omaha, Carroll G. Pearce.
Plattsmouth, Frank C. McClellan.
South Omaha, A. A. Munro.

NEVADA.

Virginia City, F. P. Langan.

NEW HAMPSHIRE.

Concord, Louis J. Rundlett.
Dover, Channing Folsom.
Keene, Thaddeus William Harris.
Manchester, William E. Buck.

Nashua, James H. Fassett.
Portsmouth, James C. Simpson.
Rochester, Henry Kimball.

NEW JERSEY.

Atlantic City, William B. Loudenslager.
Bayonne, Charles M. Davis.
Bordentown, William Macfarland.¹
Bridgeton, John S. Turner.
Burlington, Wilbur Watts.¹
Camden, Martin V. Bergen.
Elizabeth, William J. Shearer.
Gloucester, John C. Stinson.
Hackensack, C. D. Bogart.¹
Harrison, John Dwyer.¹
Hoboken, David E. Rue.
Jersey City, Henry Snyder.
Lambertville, Edward Rittenhouse.
Long Branch, Christopher Gregory.
Millville, E. C. Stokes.

Morristown, W. L. R. Haven.
New Brunswick, George G. Ryan.
Newark, William N. Barringer.
Orange, Usher W. Cutts.
Passaic, H. H. Hutton.
Paterson, J. A. Reinbart.
Perth Amboy, Samuel E. Shull.
Phillipsburg, H. Budd Howell.
Plainfield, Henry M. Maxson.
Rahway, Henry B. Rollinson.
Red Bank, Richard Case.
Salem, Morris H. Stratton.
South Amboy, W. L. Heineken.
Trenton, Leslie C. Pierson.²
Union, Otto Ortel.³

NEW MEXICO.

Santa Fe, Ulysses T. Curran.

NEW YORK.

Albany, Charles W. Cole.
Albion, Freeman A. Greene.
Amsterdam, District No. 8, J. W. Kimball.
District No. 11, John G. Serviss.
Auburn, Benjamin B. Snow.
Batavia, John Kennedy.
Binghamton, Marcus W. Scott.
Brooklyn, William H. Maxwell.
Buffalo, Henry P. Emerson.
Canandaigua, J. Carlton Norris.
Catskill, Edward L. Stevens.
Cohoes, George E. Dixon.
College Point, Mary L. Lyles.

Corning, Leigh R. Hunt.
Cortland, C. V. Coon.
Dunkirk, John W. Babcock.
Edgewater, District No. 2 (Middletown and Southfield towns), A. Hall Burdick (post-office, Stapleton).
District No. 1, J. W. Barris (post-office, Tompkinsville).
District No. —, S. J. Pardee (post-office, Rosebank).
Elmira, Elias J. Beardsley.
Flushing, John J. Chickering.
Fulton, B. C. Clapp.¹

¹ Principal.

² Supervising principal, B. C. Gregory.

³ Post-office, Weehawken.

II.—LIST OF CITY SUPERINTENDENTS—Continued.

NEW YORK—Continued.

Geneva, William H. Truesdale.
 Glens Falls, Sherman Williams.
 Gloversville, James A. Batce.
 Greenbush, H. R. Jolley.
 Green Island, James Healty.
 Haverstraw, L. O. Markham.¹
 Hempstead, Wallace S. Newton.¹
 Hoosick Falls, H. H. Snell.
 Hornellsville, William R. Prentice.
 Hudson, J. Mace Smith.
 Ithaca, J. Wood.
 Ithaca, H. W. Foster.
 Jamaica: District No. 4, William J. Ballard.
 District No. 7, Cyrus E. Smith (post-office, Woodhaven).
 Jamestown, Revillus R. Rogers.
 Johnstown, William S. Snyder.
 Kingston: Kingston school district, Charles M. Ryan.
 District No. 2, _____.
 District No. 3, Henry Powers.¹
 District No. 4, Egbert Lewis.¹
 Lansingburg, George F. Sawyer.
 Little Falls, Thomas A. Caswell.
 Lockport, Emmet Belknap.
 Long Island City, John E. Shull.
 Lyons, W. H. Kinney.
 Malone, Sarah L. Perry.
 Mattenwan, Gurdin R. Miller.¹
 Medina, Henry Pease.
 Middletown, James F. Tuthill.
 Mount Vernon, Charles E. Nichols.
 New Brighton, Julia K. West.²
 New Rochelle, Isaac E. Young.
 New York, John Jasper.
 Newburg, R. V. K. Montfort.
 Niagara Falls, Nathaniel L. Benham.
 North Tonawanda, Clinton S. Marsh.
 Norwich, Elbert W. Griffith.

Nyack, Ira H. Lawton.
 Ogdensburg, Barney Whitney.
 Olean, Fox Holden.
 Oneida: District No. 25, Frank W. Jennings.
 District No. 26, H. H. Douglass.
 Oneonta, Nathaniel N. Bull.
 Oswego, George E. Bullis.
 Owego, Edwin P. Recordon.
 Peekskill: Drunhill district (District No. 7), John Millar.
 akside district (District No. 8), A. D. Dunbar.
 Penn Yan, William Joseph Palo.
 Plattsburg, James G. Riggs.
 Port Chester, John C. Rockwell.
 Port Jervis, John M. Dolph.
 Port Richmond, Orry H. Hoag.
 Poughkeepsie, Edward Burgess.
 Rochester, Milton Noyes.
 Rome, William D. Mauro.
 Saratoga Springs, Thomas R. Knell.
 Saugerties, Fred. N. Moulton.
 Schenectady, Samuel B. Howe.
 Seneca Falls, F. S. Porter.
 Sing Sing, J. Irving Gorton.
 Syracuse, A. B. Blodgett.
 Tonawanda, F. J. Diamond.
 Troy, John H. Willets.
 Utica, George Griffith.
 Waterford, Alexander Falconer.
 Waterloo, Thomas C. Wilber.¹
 Watertown, William G. Williams.
 Waverly, P. M. Hull.
 West Chester, Michael E. Devlin.
 West Troy, James R. Main.²
 White Plains, Ralph A. Stewart.
 Whitehall, W. W. Howe.
 Yonkers, Charles E. Gorton.

NORTH CAROLINA.

Asheville, J. D. Feggleston, jr.
 Charlotte, Alexander Graham.
 Concord, J. F. Shinn.
 Durham, Clinton W. Toms.
 Fayetteville, B. C. McIver.
 Goldsboro, Logan D. Howell.

Henderson, J. B. White.⁴
 Newbern, John S. Long.
 Raleigh, Edward P. Moses.
 Salisbury, R. G. Kizer.
 Wilmington, M. C. S. Noble.
 Winston, John Jay Blair.

NORTH DAKOTA.

Fargo, Darius Steward.

Grand Forks, J. N. Kelley.

OHIO.

Akron, Elias Fraunfelter.
 Alliance, John E. Morris.
 Ashtabula, J. S. Lowe.
 Avondale, A. B. Johnson.
 Bellaire, Benjamin T. Jones.
 Bellefontaine, Henry Whitworth.
 Brooklyn, Charles M. Knight.
 Bucyrus, F. M. Hamilton.
 Cambridge, H. B. Williams.
 Canton, L. W. Day.
 Chillicothe, _____.
 Cincinnati, William H. Morgan.
 Circleville, M. H. Lewis.
 Cleveland, Lewis H. Jones.
 Columbus, J. A. Shawan.
 Dayton, W. J. White.
 Defiance, James McInnis.
 Delaware, George A. Chambers.
 Delphos, E. W. Hastings.
 East Liverpool, S. D. Sauer.
 Elyria, Henry M. Parker.
 Findlay, J. W. Zeller.
 Fostoria, H. L. Frank.
 Fremont, W. W. Ross.

Gallion, A. W. Lewis.
 Gallipolis, H. B. Ewing.
 Greenville, F. Gillum Cromer.
 Hamilton, _____.
 Ironton, M. C. Smith.
 Jackson, J. E. Kinnison.
 Kenton, E. P. Dean.
 Lancaster, Elijah Burgess.
 Lima, Charles C. Miller.
 Lorain, F. D. Ward.
 Mansfield, E. D. Lyon.
 Marietta, W. W. Boyd.
 Marion, Arthur Powell.
 Martins Ferry, W. H. Stewart.
 Massillon, Edmund A. Jones.
 Middletown, James L. Orr.
 Mount Vernon, Lewis D. Bonebrake.
 Nelsonville, Fletcher S. Coultrap.
 New Philadelphia, G. C. Maurer.
 Newark, J. C. Hartzler.
 Niles, Frank J. Roller.
 Norwalk, A. D. Beechy.
 Oberlin, George W. Waite.
 Painesville, George W. Ready.

¹ Principal.² School commissioner.³ School commissioner; post-office, Guilderland.⁴ Chairman of the school committee.

II.—LIST OF CITY SUPERINTENDENTS—Continued.

OHIO—Continued.

Piqua, C. W. Bennett.
 Pomeroy, T. C. Flanegin.
 Portsmouth, Thomas Vickers.
 Salem, M. E. Hard.
 Sandusky, E. J. Shives.
 Sidney, E. S. Cox.
 Springfield, Carey Boggess.
 Steubenville, Henry Ney Mertz.
 Tiffin, J. H. Snyder.
 Toledo, Harvey W. Compton.
 Troy, C. L. Van Cleave.

Urbana, William McK. Vance.
 Van Wert, W. T. Bushman.
 Warren, R. S. Thomas.
 Washington C. H., N. H. Chaney.
 Wellston, E. W. Patterson.
 Wellsville, James L. MacDonald.
 Wooster, Charles Hauptert.
 Xenia, Edwin B. Cox.
 Youngstown, F. Trendley.
 Zanesville, W. D. Leah.

OKLAHOMA.

Oklahoma, E. L. Hallock.

OREGON.

Astoria, R. N. Wright.
 Portland, I. W. Pratt.

Salem, George A. Peebles.

PENNSYLVANIA.

Allegheny, John Morrow.
 Allentown, F. D. Raub.
 Altoona, D. S. Keith.
 Archbald, R. N. Davis.¹
 Ashland, William C. Estler.
 Beaver Falls, J. M. Reed.
 Bethlehem, Thomas Farquhar.
 Bloomsburg, L. P. Sterner.
 Braddock, John S. Keefer.
 Bradford, E. E. Miller.
 Bristol, Matilda S. Booz.
 Butler, Ebenezer Mackey.
 Carbondale, John J. Forbes.
 Carlisle, C. P. Humrich.² Maggie Landis.³
 Chambersburg, William H. Hockenberry.
 Chester, Charles F. Foster.
 Columbia, S. H. Hoffman.
 Connellsville, W. G. Gans.¹
 Conshohocken, J. Horace Landis.
 Corry, A. D. Colegrove.
 Danville, W. D. Steinbach.
 Dubois, ———.
 Dunmore, John E. Williams.
 Easton, William W. Cottingham.
 Erie, H. C. Missimer.
 Franklin, N. P. Kinsley.
 Greensburg, Frank H. Shaw.
 Harrisburg, Lemuel O. Foose.
 Hazleton, David A. Harman.
 Homestead, John C. Kendall.
 Huntingdon, William M. Benson.
 Johnstown, T. B. Johnston.
 Lancaster, R. K. Buehrle.
 Lansford, I. K. Witmer.
 Lebanon, Cyrus Boger.
 Lock Haven, John A. Robb.
 McKeesport, H. F. Brooks.
 Mahanoy City, Frank Seward Miller.
 Mauch Chunk, James J. Bevan.
 Meadville, Henry V. Hotchkiss.
 Middletown, H. H. Weber.

Milton, Lewis A. Beardsley.
 Monongahela City, E. W. Dalbey.²
 Mount Carmel, Samuel H. Dean.
 Nanticoke, Clarence B. Miller.
 New Brighton, J. Burdette Richey.
 New Castle, T. F. Kane.
 Norristown, Joseph K. Gotwals.
 Oil City, C. A. Babcock.
 Ollyphant, M. W. Cumming.
 Philadelphia, Edward Brooks.
 Phoenixville, Harry F. Leister.
 Pittsburg, George J. Luckey.
 Pittston, Robert Shiel.¹
 Plymouth (borough), Irving A. Helkes.¹
 Pottstown, William W. Rupert.
 Pottsville, B. F. Patterson.
 Reading, Samuel A. Baer.
 Renovo, James J. Palmer.¹
 Scranton, George W. Phillips.
 Shamokin, William F. Harpel.
 Sharon, J. W. Canon.
 Sharpsburg, E. B. McRoberts.
 Shenandoah, Martin P. Whitaker.
 South Bethlehem, Owen R. Wilt.
 South Chester, J. C. Hockenberry.⁴
 South Easton,⁵ ———.
 Steelton, L. E. McGinnis.
 Sunbury, C. D. Oberdorf.
 Tamaqua, Robert F. Ditchburn.
 Tarentum, B. S. Hunnell.
 Titusville, Robert D. Crawford.
 Towanda, Minor Terry.³
 Tyrone, C. E. Kauffman.
 Uniontown, Lee Smith.
 Warren, W. L. MacGowan.
 Washington, A. G. Braden.
 West Chester, Addison Jones.
 Wilkesbarre, James M. Coughlin.
 Wilkinsburg, J. D. Anderson.
 Williamsport, Samuel Transeau.
 York, Atrous Wanner.

RHODE ISLAND.

Bristol, John P. Reynolds.
 Central Falls, Frank O. Draper.
 East Providence, J. E. C. Farnham.
 Johnston, Frederick B. Cole.⁶
 Newport, Benjamin Baker.

Pawtucket, Gilman C. Fisher.
 Providence, Horace S. Tarbell.
 Westerly, C. H. Babcock.
 Woonsocket, F. E. McFee.

SOUTH CAROLINA.

Charleston, Henry P. Archer.
 Columbia, E. S. Dreher.

Greenville, E. L. Hughes.
 Spartanburg, Frank Evans.

SOUTH DAKOTA.

Sioux Falls, Alexander M. Rowe.

¹Supervising principal.
²Secretary of the school board.
³Principal.

⁴Post-office, Thurlow.
⁵Post-office, Easton.
⁶Post-office, Olneyville.

II.—LIST OF CITY SUPERINTENDENTS—Continued.

TENNESSEE.

Chattanooga, A. T. Barrett.
 Clarksville, J. W. Graham.
 Columbia, J. G. Meadors.
 Jackson, Thomas H. Paine.

Johnson City, R. H. Freeland.
 Knoxville, Albert Ruth.
 Memphis, George W. Gordon.
 Nashville, Z. H. Brown.

TEXAS.

Austin, Miss Mamie E. North, acting.
 Brenham, E. W. Tarrant.
 Brownsville, J. F. Cummings.
 Corpus Christi, Charles W. Croesley.
 Corsicana, J. T. Hand.
 Dallas, J. L. Long.
 Denison, William Gay.
 El Paso, G. P. Putnam.
 Fort Worth, Alexander Hogg.
 Gainesville, E. F. Comegys.
 Galveston, Oscar H. Cooper.

Greenville, J. H. Van Amburgh.
 Houston, W. S. Sutton.
 Laredo, F. A. Parker.
 Marshall, Chesley F. Adams.
 Palestine, P. V. Pennybacker.
 Paris, J. G. Wooten.
 San Antonio, J. E. Smith.
 Sherman, W. Leonard Lemmon.
 Temple, J. E. Blair.
 Tyler, W. S. Potter.
 Waco, Charles T. Alexander.

UTAH.

Logan, John T. Caine, jr.
 Ogden, William Allison.

Provo, William S. Rawlings.
 Salt Lake City, J. F. Millsbaugh.

VERMONT.

Barre, O. D. Mathewson.
 Brattleboro, Miss M. Belle Smith.
 Burlington, Henry O. Wheeler.

Rutland, Alfred Turner.
 St. Albans, Francis A. Bagnall.

VIRGINIA.

Alexandria, Kosciusko Kemper.
 Charlottesville, F. A. Massie.
 Danville, Abner Anderson.
 Fredericksburg, E. M. Crutchfield.
 Lynchburg, E. C. Glass.
 Manchester, A. H. Fitzgerald.¹
 Newport News, J. H. Crawford.²

Norfolk, Richard A. Dobie.
 Petersburg, D. M. Brown.
 Portsmouth, John C. Ashton.
 Richmond, William F. Fox.
 Roanoke, B. Rust.
 Staunton, John H. Bader.
 Winchester, Maurice M. Lynch.

WASHINGTON.

Fairhaven, W. T. Hughes.
 New Whatcom, Harry Pattison.
 Olympia, W. H. Beeler.
 Port Townsend, O. B. Grant.

Seattle, Frank J. Barnard.
 Spokane Falls, D. Bemiss.
 Tacoma, Henry M. James.
 Walla Walla, R. C. Kerr.

WEST VIRGINIA.

Charlestown, George S. Laidley.
 Huntington, James M. Lee.
 Martinsburg, A. B. Carman.

Parkersburg, W. M. Straus.
 Wheeling, W. H. Anderson.

WISCONSIN.

Antigo, John E. Martin.
 Appleton, Carrie E. Morgan.
 Ashland, B. B. Jackson.
 Baraboo, J. E. NeCollins.
 Beaver Dam, James J. Dick.
 Beloit, C. W. Merriman.
 Berlin, N. M. Dodson.
 Chippewa Falls, R. L. Barton.
 Eau Claire, J. K. McGregor.
 Fond du Lac, Ed. McLoughlin.
 Green Bay, M. H. McMahon.
 Janesville, D. D. Mayne.
 Kaukauna, Hampton Corlett.
 Kenosha, Gerald R. McDowell.
 La Crosse, Albert Hardy.
 Madison, R. B. Dudgeon.
 Manitowoc, H. Evans.
 Marinette, J. T. Edwards.

Menasha, Joseph L. Fieweger.
 Menominee, Judson E. Hoyt.
 Merrill, W. L. Holden.
 Milwaukee, George W. Peckham.
 Neenah, E. A. Williams.
 Oconto, R. L. Cooley.
 Oshkosh, Rufus H. Halsey.
 Portage, William Kulton.
 Racine, Osman C. Seelye.
 Sheboygan, George Heller.
 Stevens Point, Henry A. Simonds.
 Superior, A. W. Rankin.
 Watertown, C. F. Viebahn.
 Waukesha, A. J. Smith.
 Wausau, William R. Moss.
 West Green Bay, A. W. Burton.
 White Water, E. W. Walker.

WYOMING.

Cheyenne, James O. Churchill.

Laramie, Frank W. Lee.

¹ Principal.

² County superintendent; post-office, Lee Hall.

III.—COLLEGE PRESIDENTS.

I.—Colleges for males and coeducational colleges of liberal arts.

Name of president.	University or college.	Address.
E. L. Blalock, A. M.	Blount College	Blountsville, Ala.
Arthur W. McGaha, D. D.	Howard College	East Lake, Ala.
John O. Keener, D. D.	Southern University	Greensboro, Ala.
J. H. Patterson, Ph. D.	Lafayette College	Lafayette, Ala.
Henry J. Willingham, A. B.	Lineville College	Lineville, Ala.
C. S. Dinkins	Selma University	Selma, Ala.
James Lonergan, S. J.	Spring Hill College	Spring Hill, Ala.
R. C. Jones, LL. D.	University of Alabama	University, Ala.
Howard Billman	University of Arizona	Tucson, Ariz.
G. C. Jones, A. M.	Arkadelphia Methodist College	Arkadelphia, Ark.
John W. Conger, A. M.	Ouachita Baptist College	Do.
John I. Cleland, A. M.	Arkansas College	Batesville, Ark.
Jas. A. Laughlin	Arkansas Cumberland College	Clarksville, Ark.
A. C. Millar, A. M.	Hendrix College	Conway, Ark.
William F. Shedd	Little Rock University	Little Rock, Ark.
Thomas Mason, A. M., D. D.	Philander Smith College	Do.
Wm. S. Johnson, A. M.	Mountain Home Baptist College	Mountain Home, Ark.
Martin Kellogg, A. M., LL. D.	University of California	Berkeley, Cal.
C. G. Baldwin	Pomona College	Claremont, Cal.
Wm. Henslee, A. B.	Pierce Christian College	College City, Cal.
W. C. Sawyer, Ph. D., acting	University of the Pacific	College Park, Cal.
E. N. Condit, A. M.	Occidental College	Los Angeles, Cal.
A. J. Meyer, C. M.	St. Vincent's College	Do.
J. N. Bear, D. D.	Napa College	Napa, Cal.
S. B. Morse, D. D.	California College	Oakland, Cal.
Brother Bettelin	St. Mary's College	Do.
C. H. Keyes, A. B.	Throop Polytechnic Institute	Pasadena, Cal.
Edward Allen, S. J.	Saint Ignatius College	San Francisco, Cal.
Joseph Riordan, S. J.	Santa Clara College	Santa Clara, Cal.
J. S. Austin, A. M.	Pacific Methodist College	Santa Rosa, Cal.
D. S. Jordan, Ph. D., LL. D.	Leland Stanford Junior University	Stanford University, Cal.
J. P. Widney, A. M., M. D.	University of Southern California	University, Cal.
A. L. Cowell, A. M.	San Joaquin Valley College	Woodbridge, Cal.
Henry D. McAneney, A. M.	Hesperian College	Woodland, Cal.
James H. Baker, LL. D.	University of Colorado	Boulder, Colo.
Wm. F. Slocum, jr., LL. D.	Colorado College	Colorado Springs, Colo.
John McLean	Presbyterian College of the Southwest	Del Norte, Colo.
Wm. F. McDowell, Ph. D., S. T. B.	University of Denver	University Park, Colo.
Geo. W. Smith, D. D., LL. D.	Trinity College	Hartford, Conn.
B. P. Raymond, D. D., LL. D.	Wesleyan University	Middletown, Conn.
Timothy Dwight, D. D., LL. D.	Yale University	New Haven, Conn.
Albert N. Raub, Ph. D.	Delaware College	Newark, Del.
B. L. Whitman, D. D.	Columbian University	Washington, D. C.
J. Havens Richards, S. J.	Georgetown University	Do.
J. E. Rankin, D. D., LL. D.	Howard University	Do.
E. M. Gallaudet, Ph. D., LL. D.	Gallaudet College	Do.
John F. Forbes, Ph. D.	John B. Stetson University	De Land, Fla.
J. T. Nolen, A. B., B. D.	Florida Conference College	Leesburg, Fla.
A. Lewis, A. M.	Seminary West of the Suwanee River	Tallahassee, Fla.
Charles G. Fairchild	Rollins College	Winter Park, Fla.
Wm. E. Boggs, D. D., LL. D.	University of Georgia	Athens, Ga.
Horace Bumstead, D. D.	Atlanta University	Atlanta, Ga.
A. Richardson	Morris Brown College	Do.
Lamont Gordon, A. M.	Methodist Episcopal College	Birmingham, Ga.
C. O. Stubbs, A. M.	Bowdon College	Bowdon, Ga.
J. B. Gambrell, D. D.	Mercer University	Macon, Ga.
W. A. Candler, D. D.	Emory College	Oxford, Ga.
D. C. John, D. D.	Clark University	South Atlanta, Ga.
W. F. Robinson	Young Harris College	Young Harris, Ga.
Franklin B. Gault, M. S.	University of Idaho	Moscow, Idaho.
J. G. Evans, D. D., LL. D.	Hedding College	Blonding, Ill.
Wm. H. Wilder, A. M., M. D.	Illinois Wesleyan University	Bloomington, Ill.
M. J. Marsile, C. S. V.	St. Viateur's College	Bonbrunais, Ill.
Jas. E. Rogers, D. D., Ph. D.	Blackburn University	Carlinville, Ill.
J. M. Ruthrauff	Carthage College	Carthage, Ill.
Andrew S. Draper, LL. D.	University of Illinois	Champaign, Ill.
J. F. X. Hoeffer, S. J.	St. Ignatius College	Chicago, Ill.
Wm. R. Harper, Ph. D., D. D.	University of Chicago	Do.
W. E. Lugenbeel	Austin College	Effingham, Ill.
Daniel Irion	Evangelical Proseminary	Elmhurst, Ill.
J. H. Hartin, LL. D.	Eureka College	Eureka, Ill.
Henry W. Rogers, LL. D.	Northwestern University	Evanston, Ill.
J. A. Leavitt	Bwing College	Bwing, Ill.
R. A. Morley, A. M.	Northern Illinois College	Fulton, Ill.
J. H. Finley, A. M.	Knox College	Galesburg, Ill.
Charles E. Nash, D. D.	Lombard University	Do.
Jesse E. W. Morgan	Greer College	Hoopeston, Ill.
John E. Bradley, Ph. D.	Illinois College	Jacksonville, Ill.
J. M. Coulter, Ph. D., LL. D.	Lake Forest University	Lake Forest, Ill.

III.—COLLEGE PRESIDENTS—Continued.

I.—Colleges for males and coeducational colleges of liberal arts—Continued.

Name of president.	University or college.	Address.
M. H. Chamberlin, A. M., LL. B.	McKendree College	Lebanon, Ill.
A. E. Turner, A. M.	Lincoln University	Lincoln, Ill.
J. B. McMichael, D. D.	Monmouth College	Monmouth, Ill.
H. J. Kiekhoefer, A. M.	Northwestern College	Naperville, Ill.
B. W. Baker, A. M.	Chaddock College	Quincy, Ill.
Nicholas Leonard, O. S. F.	St. Francis Solanus College	Do.
Olof Olsson, D. D., Ph. D.	Augustana College	Rock Island, Ill.
Hugoline Storr, O. S. F.	St. Joseph's Diocesan College	Tentopolis, Ill.
Austen K. de Blois, Ph. D.	Shurtleff College	Upper Alton, Ill.
B. L. Senoff, A. B.	Westfield College	Westfield, Ill.
Chas. A. Blanchard	Wheaton College	Wheaton, Ill.
A. C. Bacone, A. M.	Indian University	Bacone, Ind. T.
W. A. Caldwell, A. M.	Henry Kendall College	Muskogee, Ind. T.
Joseph Swain, LL. D.	Indiana University	Bloomington, Ind.
Geo. S. Burroughs, Ph. D.	Wabash College	Crawfordsville, Ind.
Jos. Schmidt	Concordia College	Fort Wayne, Ind.
William T. Stott, D. D.	Franklin College	Franklin, Ind.
H. A. Gobin, D. D.	De Pauw University	Greencastle, Ind.
D. W. Fisher, D. D., LL. D.	Hanover College	Hanover, Ind.
W. H. Davis	Hartsville College	Hartsville, Ind.
Scot Butler, A. M.	Butler University	Irrington, Ind.
L. J. Aldrich, A. M., D. D.	Union Christian College	Merom, Ind.
John H. Martin, A. M., D. D.	Moore's Hill College	Moore's Hill, Ind.
Andrew Morrissey, C. S. C.	University of Notre Dame	Notre Dame, Ind.
Joseph J. Mills, A. M., LL. D.	Earlham College	Richmond, Ind.
Geo. Hindley, B. D.	Ridgeville College	Ridgeville, Ind.
Fintan Mundwiler, O. S. B.	St. Meinrad's College	St. Meinrad, Ind.
T. C. Reade, D. D.	Taylor University	Upland, Ind.
James Marshall, A. M., D. D.	Coe College	Cedar Rapids, Iowa.
J. Frederick Hirsch, A. M.	Charles City College	Charles City, Iowa.
F. Richter	Wartburg College	Clinton, Iowa.
J. M. Littlejohn, D. D., Ph. D.	Amity College	College Springs, Iowa.
Laur. Larsen	Luther College	Decorah, Iowa.
H. L. Stetson, D. D.	Des Moines College	Des Moines, Iowa.
B. O. Aylesworth, LL. D.	Drake University	Do.
Ambrose C. Smith, D. D.	Parsons College	Fairfield, Iowa.
John W. Bissell, A. M., D. D.	Upper Iowa University	Fayette, Iowa.
George A. Gatos, D. D.	Iowa College	Grinnell, Iowa.
Hugh Robinson, A. M.	Lenox College	Hopkinsia, Iowa.
Fletcher Brown, A. M., B. D.	Simpson College	Indianola, Iowa.
Charles A. Schaeffer, Ph. D.	State University of Iowa	Iowa City, Iowa.
Friedrich Munz, A. M.	German College	Mount Pleasant, Iowa.
C. L. Stafford, D. D.	Iowa Wesleyan University	Do.
Wm. F. King, LL. D.	Cornell College	Mount Vernon, Iowa.
J. M. Atwater, A. M.	Oskaloosa College	Oskaloosa, Iowa.
A. Rosenberger, A. B., LL. B.	Penn. College	Do.
Arthur B. Chaffee, D. D.	Central University of Iowa	Pella, Iowa.
George W. Carr	University of the Northwest	Sioux City, Iowa.
Willis Marshall	Buena Vista College	Storm Lake, Iowa.
Wm. M. Brooks, A. M.	Tabor College	Tabor, Iowa.
L. Bookwalter, D. D.	Western College	Toledo, Iowa.
Jacob A. Clutz, D. D.	Midland College	Atchison, Kans.
Innocent Wolf, O. S. B., D. D.	St. Benedict's College	Do.
L. H. Murlin, A. B., S. T. B.	Baker University	Baldwin, Kans.
E. H. Vaughan, Ph. D.	Soule College	Dodge City, Kans.
J. D. Hewitt, D. D.	College of Emporia	Emporia, Kans.
J. A. Weller, D. D.	Central College	Enterprise, Kans.
W. D. McFarland, Ph. D.	Highland University	Highland, Kans.
E. J. Hoenschel	Campbell University	Holton, Kans.
F. H. Snow, Ph. D., LL. D.	University of Kansas	Lawrence, Kans.
C. M. Brooke, A. M.	Lane University	Leocompton, Kans.
C. A. Swenson, A. M.	Bethany College	Lindsborg, Kans.
F. W. Colegrave, A. M.	Ottawa University	Ottawa, Kans.
Edward A. Higgins, S. J.	St. Mary's College	St. Marys, Kans.
Edward W. Mueller, A. M.	Kansas Wesleyan University	Salina, Kans.
F. M. Spencer, D. D.	Cooper Memorial College	Sterling, Kans.
Peter McVicar, A. M., D. D.	Washburn College	Topeka, Kans.
Henry Sieck	St. John's Lutheran College	Winfield, Kans.
Chester A. Place, A. M.	Southwest Kansas College	Do.
Daniel Stevenson, D. D.	Union College	Barbourville, Ky.
Wm. G. Frost, Ph. D.	Berea College	Berea, Ky.
Wm. A. Obenchain, A. M.	Ogden College	Bowling Green, Ky.
W. C. Young, D. D., LL. D.	Centre College	Danville, Ky.
W. S. Giltner, A. M.	Eminence College	Eminence, Ky.
A. C. Davidson, D. D.	Georgetown College	Georgetown, Ky.
J. W. Hardy	South Kentucky College	Hopkinsville, Ky.
Milton Elliott	Garrard College	Lancaster, Ky.
Charles L. Loos	Kentucky University	Lexington, Ky.
L. H. Blanton, D. D.	Central University	Richmond, Ky.

III.—COLLEGE PRESIDENTS—Continued.

I.—Colleges for males and coeducational colleges of liberal arts—Continued.

Name of president.	University or college.	Address.
W. S. Ryland, D. D.	Bethel College	Russellville, Ky.
John L. Steffan, D. D., Ph. D.	St. Mary's College	St. Marys, Ky.
E. H. Pearce, D. D.	Kentucky Wesleyan College	Winchester, Ky.
J. W. Nicholson, LL. D.	Louisiana State University	Baton Rouge, La.
James H. Blenk, S. M.	Jefferson College	Convent, La.
C. W. Carter, D. D.	Centenary College of Louisiana	Jackson, La.
C. W. Tomkies	Reachio College	Keachie, La.
D. McKiniry, S. J.	College of the Immaculate Conception	New Orleans, La.
E. C. Mitchell, D. D.	Leland University	Do.
L. G. Adkinson, D. D.	New Orleans University	Do.
Oscar Atwood, A. M.	Straight University	Do.
Wm. P. Johnston, LL. D.	Tulane University	Do.
William De Witt Hyde, D. D.	Bowdoin College	Brunswick, Me.
George C. Chase, A. M.	Bates College	Lewiston, Me.
Nathaniel Butler, A. M.	Colby University	Waterville, Me.
Thomas Fell, Ph. D., LL. D.	St. John's College	Annapolis, Md.
D. C. Gilman, LL. D.	Johns Hopkins University	Baltimore, Md.
John A. Morgan, S. J.	Loyola College	Do.
Francis A. Wagner, D. D.	Morgan College	Do.
Charles W. Reid, Ph. D.	Washington College	Chestertown, Md.
Brother Maurice	Rock Hill College	Ellicott City, Md.
C. B. Rex, D. D.	St. Charles College	Do.
Edward P. Allen, D. D.	Mount St. Marys College	Mount St. Marys, Md.
William H. Purnell, LL. D.	New Windsor College	New Windsor, Md.
Thomas H. Lewis, A. M., D. D.	Western Maryland College	Westminster, Md.
Merrill E. Gates, Ph. D., LL. D., L. H. D.	Amherst College	Amherst, Mass.
Timothy Bronnahan, S. J.	Boston College	Boston, Mass.
William F. Warren, LL. D.	Boston University	Do.
Charles W. Elliot, LL. D.	Harvard University	Cambridge, Mass.
Samuel H. Lee	French-American College	Springfield, Mass.
Elmer H. Capen, D. D.	Tufts College	Tufts College, Mass.
F. Carter, Ph. D., LL. D.	Williams College	Williamstown, Mass.
G. Stanley Hall, Ph. D., LL. D.	Clark University	Worcester, Mass.
Edward A. Mettuck, S. J.	College of the Holy Cross	Do.
Denison C. Thomas, Ph. D.	Adrian College	Adrian, Mich.
L. R. Fiske, D. D., LL. D.	Albion College	Albion, Mich.
August F. Bruske, D. D.	Alma College	Alma, Mich.
James B. Angell, LL. D.	University of Michigan	Ann Arbor, Mich.
George W. Caviness, A. M.	Battle Creek College	Battle Creek, Mich.
Edson L. Whitney, Ph. D.	Benzonia College	Benzonia, Mich.
H. A. Schapman, S. J.	Detroit College	Detroit, Mich.
George F. Mosher, LL. D.	Hillsdale College	Hillsdale, Mich.
Gerrit J. Kollen, A. M.	Hope College	Holland, Mich.
A. G. Slocum, LL. D.	Kalamazoo College	Kalamazoo, Mich.
W. G. Sperry, D. D.	Olivet College	Olivet, Mich.
Peter Engel, O. S. B., Ph. D.	St. John's University	Collegeville, Minn.
George H. Bridgman, D. D.	Northwestern Christian College	Excelsior, Minn.
Georg Sverdrup	Hamline University	Hamline, Minn.
Cyrus Northrop, LL. D.	Augsburg Seminary	Minneapolis, Minn.
James W. Strong, D. D.	University of Minnesota	Do.
Thorbjörn N. Mohn	Carleton College	Northfield, Minn.
James Wallace, Ph. D.	St. Olaf College	Do.
C. W. Hertzler, A. B.	Macalester College	St. Paul, Minn.
Matthias Wahlstrom, A. M.	St. Paul's College	St. Paul Park, Minn.
Gideon A. Burgess, A. M.	Gustavus Adolphus College	St. Peter, Minn.
J. W. Provine, Ph. D.	Parker College	Winnebago City, Minn.
C. A. Huddleston, A. M.	Mississippi College	Clinton, Miss.
Charles E. Libbey, S. T. D.	Cooper-Huddleston College	Daleville, Miss.
W. B. Murrain, D. D.	Rust University	Holly Springs, Miss.
Robert B. Fulton, A. M.	Millsaps College	Jackson, Miss.
E. J. Gantz	University of Mississippi	University, Miss.
W. H. Pritchett, A. M.	Central Christian College	Albany, Mo.
Arnold B. Bush, A. M.	Northwest Missouri College	Do.
R. E. Downing, B. Sur.	Southwest Baptist College	Bolivar, Mo.
S. M. Dick, Ph. D.	Pike College	Bowling Green, Mo.
Clinton Lockhart, Ph. D.	Missouri Wesleyan College	Cameron, Mo.
H. G. Dockery	Christian University	Canton, Mo.
Richard H. Jesse, LL. D.	St. Vincent's College	Cape Girardeau, Mo.
Geo. W. Mitchell	University of the State of Missouri	Columbia, Mo.
J. D. Hammond, D. D.	Grand River Christian Union College	Edinburg, Mo.
Edward C. Gordon, D. D.	Central College	Fayette, Mo.
Chas. C. Hemenway	Westminster College	Fulton, Mo.
J. H. Selden, A. M.	Pritchett School Institute	Glasgow, Mo.
J. F. Cook, A. M., LL. D.	Ozark College	Greenfield, Mo.
Carleton B. Marsh, A. B.	La Grange College	La Grange, Mo.
J. P. Greene, D. D., LL. D.	Lawson Presbyterian College	Lawson, Mo.
Wm. H. Black, D. D.	William Jewell College	Liberty, Mo.
	Missouri Valley College	Marshall, Mo.

III.—COLLEGE PRESIDENTS—Continued.

I.—Colleges for males and coeducational colleges of liberal arts—Continued.

Name of president.	University or college.	Address.
W. H. Winton.....	Morrisville College.....	Morrisville, Mo.
C. C. Woods, D. D.....	Scurratt Collegiate Institute.....	Neosho, Mo.
L. M. McAfee.....	Park College.....	Parkville, Mo.
B. H. Marbury.....	St. Charles College.....	St. Charles, Mo.
Brother Paullan, F. S. C.....	College of the Christian Brothers.....	St. Louis, Mo.
Joseph Grimmelman, S. J.....	St. Louis University.....	Do.
Winfield S. Chaplin, LL. D.....	Washington University.....	Do.
Homer T. Fuller, Ph. D.....	Drury College.....	Springfield, Mo.
J. A. Thompson, A. M.....	Tarkio College.....	Tarkio, Mo.
F. A. Z. Kumber, A. M.....	Avalon College.....	Trenton, Mo.
Geo. B. Addicks, A. M.....	Central Wesleyan College.....	Warrenton, Mo.
A. B. Martin, A. M.....	College of Montana.....	Deer Lodge, Mont.
David R. Kerr, Ph. D., D. D.....	University of Omaha.....	Bellevue, Nebr.
David R. Dungan, A. M.....	Cotner University.....	Belhany, Nebr.
David B. Perry, A. M.....	Doane College.....	Crete, Nebr.
A. J. Mercer, A. M.....	Fairfield College.....	Fairfield, Nebr.
Geo. E. MacLean, LL. D.....	University of Nebraska.....	Lincoln, N. br.
.....	Gates College.....	Neligh, Nebr.
John Pahls, S. J.....	Creighton University.....	Omaha, Nebr.
Isaac Crook, D. D.....	Nebraska Wesleyan University.....	University Place, Nebr.
W. S. Reese.....	York College.....	York, Nebr.
Joseph E. Stubbs, D. D.....	State University of Nevada.....	Reno, Nev.
W. J. Tucker, D. D., LL. D.....	Dartmouth College.....	Hanover, N. H.
Hilary Pfraengle, O. S. B.....	St. Benedict's College.....	Newark, N. J.
Austin Scott, Ph. D., LL. D.....	Rutgers College.....	New Brunswick, N. J.
F. L. Patton, D. D., LL. D.....	College of New Jersey.....	Princeton, N. J.
Wm. F. Marshall, A. M.....	Seton Hall College.....	South Orange, N. J.
F. H. Guicheteau, S. P. M.....	College of the Sacred Heart.....	Vineland, N. J.
E. S. Stover.....	University of New Mexico.....	Albuquerque, N. Mex.
B. C. Davis, A. M.....	Alfred University.....	Alfred, N. Y.
Joseph F. Butler, O. S. F.....	St. Bonaventure's College.....	Allegany, N. Y.
R. B. Fairbairn, D. D., LL. D.....	St. Stephen's College.....	Annandale, N. Y.
D. H. Cochran, Ph. D., LL. D.....	Polytechnic Institute of Brooklyn.....	Brooklyn, N. Y.
Brother Jerome, O. S. F.....	St. Francis College.....	Do.
J. A. Hartnett, C. M.....	St. John's College.....	Do.
John I. Zahm, S. J.....	Canisius College.....	Buffalo, N. Y.
Henry Priest, A. M.....	St. Lawrence University.....	Canton, N. Y.
M. Woolsey Stryker, D. D.....	Hamilton College.....	Clinton, N. Y.
E. N. Potter, S. T. D., LL. D., D. C. L.....	Hobart College.....	Geneva, N. Y.
Geo. W. Smith, A. B., LL. B.....	Colgate University.....	Hamilton, N. Y.
J. G. Schurman, Sc. D., LL. D.....	Cornell University.....	Ithaca, N. Y.
Thomas E. Murphy, S. J.....	College of St. Francis Xavier.....	New York, N. Y.
Alexander S. Webb, LL. D.....	College of the City of New York.....	Do.
Sech Low, LL. D.....	Columbia College.....	Do.
Brother Justin, A. M.....	Manhattan College.....	Do.
Thomas J. Gannon, S. J.....	St. John's College.....	Do.
H. M. MacCracken, D. D., LL. D.....	University of the City of New York.....	Do.
P. S. MacHale, C. M.....	Niagara University.....	Niagara University, N. Y.
David J. Hill, LL. D.....	University of Rochester.....	Rochester, N. Y.
A. V. V. Raymond, D. D.....	Union University.....	Schenectady, N. Y.
James R. Day, D. D.....	Syracuse University.....	Syracuse, N. Y.
George T. Winston, LL. D.....	University of North Carolina.....	Chapel Hill, N. C.
D. J. Sanders, D. D.....	Biddle University.....	Charlotte, N. C.
J. B. Shearer, D. D., LL. D.....	Davidson College.....	Davidson, N. C.
John C. Kilgo, D. D.....	Trinity College.....	Durham, N. C.
L. Lyndon Hobbs, A. M.....	Guilford College.....	Guilford College, N. C.
Robert A. Yoder, A. M.....	Lenoir College.....	Hickory, N. C.
J. D. Shirley, A. M.....	North Carolina College.....	Mount Pleasant, N. C.
J. C. Clapp, D. D.....	Catawba College.....	Newton, N. C.
W. E. Abernethy.....	Rutherford College.....	Rutherford College, N. C.
Chas. F. Meserve, A. M.....	Shaw University.....	Raleigh, N. C.
William H. Goler, D. D.....	Livingstone College.....	Salisbury, N. C.
C. E. Taylor, D. D., Litt. B.....	Wake Forest College.....	Wake Forest, N. C.
M. A. Yost, A. M.....	Weaverville College.....	Weaverville, N. C.
Henry C. Simmons.....	Fargo College.....	Fargo, N. Dak.
W. Merrifield, A. M.....	University of North Dakota.....	University, N. Dak.
M. V. B. Knox, D. D.....	Red River Valley University.....	Walpeton, N. Dak.
Orello Cone, D. D.....	Buchtel College.....	Akron, Ohio.
Tamerlane P. Marsh, D. D.....	Mount Union College.....	Alliance, Ohio.
J. Allen Miller.....	Ashland University.....	Ashland, Ohio.
Chas. W. Super, Ph. D.....	Ohio University.....	Athens, Ohio.
Millard F. Warner, A. M.....	Baldwin University.....	Berea, Ohio.
C. Klemenschnelder, Ph. D.....	German Wallace College.....	Do.
David McKinney.....	Cedarville College.....	Cedarville, Ohio.
James Rogers, C. S. C.....	St. Joseph's College.....	Cincinnati, Ohio.
A. J. Burrows, S. J.....	St. Xavier College.....	Do.
P. V. N. Myers.....	University of Cincinnati.....	Do.
H. J. Ruetenik, D. D.....	Calvin College.....	Cleveland, Ohio.

III.—COLLEGE PRESIDENTS—Continued.

I.—Colleges for males and coeducational colleges of liberal arts—Continued.

Name of president.	University or college.	Address.
Chas. F. Thwing, D. D.	Western Reserve University	Cleveland, Ohio.
F. W. Stellhorn	Capital University	Columbus, Ohio.
James H. Canfield, LL. D.	Ohio State University	Do.
A. Grabowski, Ph. D.	Defiance College	Defiance, Ohio.
James W. Bashford, Ph. D.	Ohio Wesleyan University	Delaware, Ohio.
Wm. N. Yates	Findlay College	Findlay, Ohio.
F. S. Luther, A. M.	Kenyon College	Gambler, Ohio.
D. B. Purinton, A. M., LL. D.	Denison University	Graunville, Ohio.
Ely V. Zollars, LL. D.	Hiram College	Hiram, Ohio.
Carl Ackerman	Lima College	Lima, Ohio.
John W. Simpson, D. D., LL. D.	Marietta College	Marietta, Ohio.
W. A. Williams, D. D.	Franklin College	New Athens, Ohio.
Jesse Johnson	Muskingum College	New Concord, Ohio.
Wm. G. Ballantine, D. D., LL. D.	Oberlin College	Oberlin, Ohio.
Wm. O. Thompson, D. D.	Miami University	Oxford, Ohio.
Geo. W. MacMillan, Ph. D., D. D.	Richmond College	Richmond, Ohio.
John M. Davis, Ph. D.	Rio Grande College	Rio Grande, Ohio.
W. G. Compher, Ph. D.	Scio College	Scio, Ohio.
Samuel A. Ort, D. D.	Wittenberg College	Springfield, Ohio.
John A. Peters, D. D.	Heidelberg University	Tiffin, Ohio.
J. H. Williams, B. S.	Urbana University	Urbana, Ohio.
Thomas J. Sanders, Ph. D.	Otterbein University	Westerville, Ohio.
S. T. Mitchell, A. M., LL. D.	Wilberforce University	Wilberforce, Ohio.
James B. Unthank, M. S.	Wilmington College	Wilmington, Ohio.
S. F. Scovel, D. D.	University of Wooster	Wooster, Ohio.
Daniel A. Long, D. D., LL. D.	Antioch College	Yellow Springs, Ohio.
D. R. Boyd, A. M.	University of Oklahoma	Norman, Okla.
Chas. H. Chapman, Ph. D.	University of Oregon	Eugene, Oreg.
Thomas McClelland, D. D.	Pacific University	Forest Grove, Oreg.
T. G. Brownson	McMinnville College	McMinnville, Oreg.
Thomas Newlin	Pacific College	Newberg, Oreg.
B. E. Emerick, A. M.	Philomath College	Philomath, Oreg.
Willis C. Hawley, A. M.	Willamette University	Salem, Oreg.
W. J. Holland, Ph. D., D. D.	Western University of Pennsylvania	Allegheny, Pa.
Theodore L. Selp, D. D.	Muhlenberg College	Allentown, Pa.
E. B. Bierman, Ph. D.	Lebanon Valley College	Annaville, Pa.
Leander Schnerr	St. Vincent College	Beatty, Pa.
W. P. Johnston, A. M.	Geneva College	Beaver Falls, Pa.
Aug. Schultz, D. D.	Moravian College	Hethlehem, Pa.
George E. Reed, D. D., LL. D.	Dickinson College	Carlisle, Pa.
C. E. Hyatt, C. E.	Pennsylvania Military College	Chester, Pa.
Henry T. Spangler, D. D.	Ursinus College	Collegeville, Pa.
E. D. Wardfield, LL. D.	Lafayette College	Easton, Pa.
H. W. McKnight, D. D., LL. D.	Pennsylvania College	Gettysburg, Pa.
Theo. B. Roth, D. D.	Thiel College	Greenville, Pa.
Isaac C. Kettler, Ph. D.	Grove City College	Grove City, Pa.
Isaac Sharpless, Sc. D., LL. D.	Haverford College	Haverford, Pa.
W. W. Goodwin	Monongahela College	Jefferson, Pa.
John S. Stahr, Ph. D., D. D.	Franklin and Marshall College	兰卡斯特, Pa.
John H. Harris, Ph. D.	Bucknell University	Lewisburg, Pa.
Isaac N. Rendall, D. D.	Lincoln University	Lincoln University, Pa.
Brother Athanasius	St. Francis College	Loretto, Pa.
Wm. H. Crawford, D. D.	Allegheny College	Meadville, Pa.
Aaron E. Gobble, A. M.	Central Pennsylvania College	New Berlin, Pa.
R. G. Ferguson, D. D.	Westminster College	New Wilmington, Pa.
R. E. Thompson, D. D.	Central High School	Philadelphia, Pa.
Brother Isidore	La Salle College	Do.
Charles C. Harrison, A. M.	University of Pennsylvania	Do.
J. M. Wisman, A. M.	Duquesne College	Pittsburg, Pa.
John T. Murphy, C. S. Sp.	Holy Ghost College	Do.
Charles De Garmo, Ph. D.	Swarthmore College	Swarthmore, Pa.
Laurence A. Delurey, O. S. A.	Villanova College	Villanova, Pa.
James D. Moffat, D. D.	Washington and Jefferson College	Washington, Pa.
E. B. Andrews, D. D., LL. D.	Brown University	Providence, R. I.
H. E. Shepherd, A. M., LL. D.	College of Charleston	Charleston, S. C.
E. C. Murray	Presbyterian College of South Carolina	Clinton, S. C.
J. W. Morris	Allen University	Columbia, S. C.
Jas. Woodrow, Ph. D., LL. D.	South Carolina College	Do.
W. M. Grier, D. D.	Erskine College	Due West, S. C.
Charles Manly, D. D.	Furman University	Greenville, S. C.
Geo. B. Cromer, A. M.	Newberry College	Newberry, S. C.
L. M. Dunton, D. D.	Clafin University	Orangeburg, S. C.
James H. Carlisle, LL. D.	Wofford College	Spartanburg, S. C.
Wm. M. Blackburn, D. D.	Pierre University	East Pierre, S. Dak.
J. W. Hancher, M. S., A. M.	Black Hills College	Hot Springs, S. Dak.
W. I. Graham, A. M.	Dakota University	Mitchell, S. Dak.
I. P. Patch	Redfield College	Redfield, S. Dak.
Joseph W. Mauck, A. M.	University of South Dakota	Vermillion, S. Dak.
H. K. Warren	Yankton College	Yankton, S. Dak.

III.—COLLEGE PRESIDENTS—Continued.

I.—Colleges for males and coeducational colleges of liberal arts—Continued.

Name of president.	University or college.	Address.
J. Albert Wallace, D. D.	King College.	Bristol, Tenn.
Isaac W. Joyce, D. D., LL. D.	U. S. Grant University.	Chattanooga, Tenn.
George Summey, D. D.	Southwestern Presbyterian University.	Clarksville, Tenn.
J. F. Spence, S. T. D., LL. D.	American Temperance University.	Harriman, Tenn.
G. M. Savage, A. M., LL. D.	Hiwassee College.	Hiwassee College, Tenn.
J. S. McCulloch, D. D.	Southwestern Baptist University.	Jackson, Tenn.
Chas. W. Dabney, Jr., Ph. D., LL. D.	Knoxville College.	Knoxville, Tenn.
N. Green, LL. D.	University of Tennessee.	Do.
J. L. Dickens, Ph. D., LL. D.	Cumberland University.	Lebanon, Tenn.
S. W. Boardman, LL. D.	Bethel College.	McKenzie, Tenn.
Brother Maurician.	Maryville College.	Maryville, Tenn.
J. Hopwood, A. M.	Christian Brothers' College.	Memphis, Tenn.
J. T. Henderson, A. M.	Milligan College.	Milligan, Tenn.
J. Braden, D. D.	Carson and Newman College.	Mossy Creek, Tenn.
E. M. Cravath, D. D.	Central Tennessee College.	Nashville, Tenn.
Owen Jones, D. D.	Fisk University.	Do.
James H. Kirkland, Ph. D.	Roger Williams University.	Do.
B. Lawton Wiggins, A. M.	Vanderbilt University.	Do.
W. N. Billingsley, A. M.	University of the South.	Sewanee, Tenn.
J. L. Buchanan, A. M.	Burritt College.	Spencer, Tenn.
Jerre Moore, D. D.	Sweetwater College.	Sweetwater, Tenn.
James T. Cooter, A. B.	Greenville and Tusculum College.	Tusculum, Tenn.
G. Langner.	Washington College.	Washington College, Tenn.
J. D. Robnett, D. D.	University of Texas.	Austin, Tex.
Oscar L. Fisher, A. M., B. D.	Evangelical Lutheran College.	Brenham, Tex.
John O'Shanahan, S. J.	Howard Payne College.	Brownwood, Tex.
John H. McLean, A. M., D. D.	Fort Worth University.	Fort Worth, Tex.
I. B. Scott, D. D.	St. Mary's University.	Galveston, Tex.
S. M. Luckett, D. D.	Southwestern University.	Georgetown, Tex.
B. D. Cockrell.	Wiley University.	Marshall, Tex.
Addison Clark, LL. D.	Austin College.	Sherman, Tex.
R. C. Burleson, D. D., LL. D.	Trinity University.	Tehuacana, Tex.
H. T. Kealing, A. M.	Add-Ran Christian University.	Thorpe Spring, Tex.
James E. Talmage, Sc. D., Ph. D.	Baylor University.	Waco, Tex.
Matthew H. Buckham, D. D.	Paul Quinn College.	Do.
Ezra Brainerd, LL. D.	University of Utah.	Salt Lake City, Utah.
Wm. W. Smith, LL. D.	University of Vermont.	Burlington, Vt.
Wm. B. Yount.	Middlebury College.	Middlebury, Vt.
Wm. M. Thornton, LL. D.	Randolph-Macon College.	Ashland, Va.
R. G. Waterhouse, D. D.	Bridgewater College.	Bridgewater, Va.
Richard McIlwaine, D. D.	University of Virginia.	Charlottesville, Va.
G. W. C. Lee, LL. D.	Emory and Henry College.	Emory, Va.
F. W. Boatwright, A. M.	Hamden-Sidney College.	Hamden-Sidney, Va.
Julius D. Dreher, Ph. D.	Washington and Lee University.	Lexington, Va.
A. C. Jones.	Richmond College.	Richmond, Va.
F. N. English, A. M.	Roanoke College.	Salem, Va.
E. A. Sutherland.	Vashon College.	Burton, Wash.
M. W. Harrington, Ph. D.	Colfax College.	Colfax, Wash.
Calvin W. Stewart, D. D.	Walla Walla College.	College Place, Wash.
C. R. Thoburn.	University of Seattle.	Seattle, Wash.
Hiram P. Suldon.	University of Washington.	Do.
S. B. L. Penrose.	Whitworth College.	Summer, Wash.
Robert W. Douthat.	Puget Sound University.	Tacoma, Wash.
H. McDearmid, A. M.	St. James College.	Vancouver, Wash.
Hayward Fleming, acting.	Whitman College.	Walla Walla, Wash.
J. L. Goodknight, D. D.	Barboursville College.	Barboursville, W. Va.
Samuel Plantz, Ph. D., D. D.	Bethany College.	Bethany, W. Va.
E. D. Eaton, D. D., LL. D.	West Virginia College.	Flemington, W. Va.
H. A. Muehlmeier, D. D.	West Virginia University.	Morgantown, W. Va.
J. George.	Lawrence University.	Appleton, Wis.
Chas. K. Adams, LL. D.	Beloit College.	Beloit, Wis.
Wm. C. Whitford, D. D.	Mission House.	Franklin, Wis.
Leopold Bushart, S. J.	Gale College.	Galesville, Wis.
Rufus C. Flagg, D. D.	University of Wisconsin.	Madison, Wis.
Joseph Kainer.	Milton College.	Milton, Wis.
A. F. Ernst.	Marquette College.	Milwaukee, Wis.
A. A. Johnson, D. D.	Ripon College.	Ripon, Wis.
	Seminary of St. Francis of Sales.	St. Francis, Wis.
	Northwestern University.	Watertown, Wis.
	University of Wyoming.	Laramie, Wyo.

II.—Colleges for women.

V. O. Hawkins.	Athens Female College.	Athens, Ala.
Henry A. Moody, M. D.	Bailey Springs University.	Bailey Springs, Ala.
Solomon Palmer, Ph. D.	East Lake Athenaeum.	East Lake, Ala.
T. J. Simmons, A. M.	Union Female College.	Eufaula, Ala.
A. H. Todd.	Synodical Female College.	Florence, Ala.

III.—COLLEGE PRESIDENTS—Continued.

II.—Colleges for women—Continued.

Name of president.	University or college.	Address.
A. B. Jones, D. D., LL. D.	Jones College for Young Ladies	Gadsden, Ala.
S. W. Averett, LL. D.	Judson Female Institute	Marion, Ala.
Jas. D. Wade, A. M.	Marion Female Seminary	Do.
Geo. R. McNeill, Ph. D.	Isbell College	Talladega, Ala.
E. H. Murfee	Central Female College	Tuscaloosa, Ala.
John D. Simpson	Tuscaloosa Female College	Do.
John Massey, LL. D.	Alabama Conference Female College	Tuskegee, Ala.
Mrs. C. T. Mills	Mills College	Mills College, Cal.
Sister Mary Bernardine	College of Notre Dame	San Jose, Cal.
Miss M. Rutherford	Lucy Cobb Institute	Atheus, Ga.
Homer Bush, A. M.	Andrew Female College	Cuthbert, Ga.
G. J. Orr	Dalton Female College	Dalton, Ga.
Rev. James E. Powell	Monroe Female College	Forsyth, Ga.
A. W. Van Hoose	Georgia Female Seminary	Gainesville, Ga.
Rufus W. Smith, A. M.	Lagrange Female College	Lagrange, Ga.
Chas. C. Cox, A. M.	Southern Female College	Manchester, Ga.
E. H. Rowe	Wesleyan Female College	Macon, Ga.
J. Harris Chappell	Georgia Normal and Industrial College	Milledgeville, Ga.
A. J. Battle, D. D., LL. D.	Shorter College	Rome, Ga.
John E. Baker	Young Female College	Thomasville, Ga.
Joseph R. Harker, Ph. D.	Illinois Female College	Jacksonville, Ill.
E. F. Bullard, A. M.	Jacksonville Female Academy	Do.
C. W. Leffingwell, D. D.	St. Mary's School	Knoxville, Ill.
Sarah F. Anderson	Rockford College	Rockford, Ill.
John M. Duncan, A. M.	Coates College	Terre Haute, Ind.
Wm. Hishop, D. D.	College for Young Ladies	Oswego, Kans.
Annie J. Hooley	College of the Sisters of Bethany	Topeka, Kans.
Benj. F. Cabell	Potter College	Bowling Green, Ky.
Miss C. A. Campbell	Caldwell College	Danville, Ky.
E. W. Elrod	Lynnland Female College	Glendale, Ky.
J. B. Skinner	Hamilton Female College	Lexington, Ky.
H. B. McClellan, A. M.	Sayre Female Institute	Do.
Cadoman Pope	Millersburg Female College	Millersburg, Ky.
Mrs. B. W. Vineyard	Jessamine Female Institute	Nicholasville, Ky.
A. C. Goodwin	Owensboro Female College	Owensboro, Ky.
G. B. Perry	Kentucky College for Young Ladies	Pewee Valley, Ky.
A. G. Murphey	Logan Female College	Russellville, Ky.
John M. Hubbard, A. M.	Stanford Female College	Stanford, Ky.
Rice S. Eubank, B. S.	Winchester Female College	Winchester, Ky.
George J. Ramsey, A. M.	Silliman Female Institute	Clinton, La.
A. D. McVoy, A. M.	Mansfield Female College	Mansfield, La.
S. Decatur Lucas	Jefferson Davis College	Minden, La.
H. S. Whitman	Westbrook Seminary	Deering, Me.
Edgar M. Smith	Maine Wesleyan Seminary and Female College	Kents Hill, Me.
John F. Goucher, D. D.	Woman's College of Baltimore	Baltimore, Md.
J. H. Apple, A. M.	Woman's College	Frederick, Md.
C. L. Keedy, A. M., M. D.	Kee Mar College	Hagerstown, Md.
J. H. Turner, A. M.	Maryland College for Young Ladies	Lutherville, Md.
C. C. Bragdon, A. M.	Lasell Seminary for Young Women	Auburndale, Mass.
Miss Agnes Irwin	Radcliffe College	Cambridge, Mass.
L. Clark Seelye, D. D.	Smith College	Northampton, Mass.
Mrs. E. S. Mead, A. M.	Mount Holyoke College	South Hadley, Mass.
Mrs. Julia J. Irvine	Wellesley College	Wellesley, Mass.
R. B. Abbott, D. D.	Albert Lea College	Albert Lea, Minn.
W. T. Lowrey, A. M., D. D.	Blue Mountain Female College	Blue Mountain, Miss.
John W. Chambers	Whitworth Female College	Brookhaven, Miss.
Mrs. Adella M. Hillman	Hillman College	Clinton, Miss.
Robert Frazer, LL. D.	Industrial Institute and College	Columbus, Miss.
L. T. Fitzhugh	Belhaven College for Young Ladies	Jackson, Miss.
T. B. Holloman	East Mississippi Female College	Meridian, Miss.
L. M. Stone, D. D.	Stone College for Young Ladies	Do.
A. S. Maddox	Union Female College	Oxford, Miss.
H. S. Roller	Chickasaw Female College	Pontotoc, Miss.
W. H. Huntley	Port Gibson Female College	Port Gibson, Miss.
Mrs. F. P. St. Clair	Christian Female College	Columbia, Mo.
S. F. Taylor, D. D.	Stephens Female College	Do.
Hiram D. Groves	Howard Payne College	Fayette, Mo.
John W. Primrose, D. D.	Synodical Female College	Fulton, Mo.
George F. Ayres	Presbyterian College	Independence, Mo.
B. T. Blawett, LL. D.	St. Louis Seminary	Jennings, Mo.
W. A. Wilson, A. M.	Baptist Female College	Lexington, Mo.
Archibald A. Jones	Central Female College	Do.
T. P. Walton, A. B.	Elizabeth Aull Female Seminary	Do.
A. K. Yancey	Hardin College	Mexico, Mo.
W. S. Knight, D. D.	Lindenwood Female College	St. Charles, Mo.
Jesse M. Durrell	New Hampshire Conference Seminary and Female College	Tilton, N. H.
J. W. Blaisdell	Bordentown Female College	Bordentown, N. J.
J. H. McVaine, D. D.	Evelyn College	Princeton, N. J.
William E. Waters, Ph. D.	Wells College	Aurora, N. Y.

III.—COLLEGE PRESIDENTS—Continued.

II.—Colleges for women—Continued.

Name of president.	University or college.	Address.
Truman J. Backus, LL. D.	Packer Collegiate Institute.	Brooklyn, N. Y.
Rufus S. Green, D. D.	Elmira College.	Elmira, N. Y.
Emily James Smith, dean.	Barnard College.	New York, N. Y.
James M. Taylor, D. D.	Vassar College.	Poughkeepsie, N. Y.
James Atkins, D. D.	Asheville Female College.	Asheville, N. C.
S. A. Wolff.	Gaston College.	Dallas, N. C.
Dred Peacock, A. M.	Greensboro Female College.	Greensboro, N. C.
Joseph L. Murphy, A. M.	Claremont Female College.	Hickory, N. C.
Joseph A. Green.	Louisburg Female College.	Louisburg, N. C.
John B. Brewer, A. M.	Chowan Baptist Female Institute.	Murfreesboro, N. C.
F. P. Hobgood.	Oxford Female Seminary.	Oxford, N. C.
John H. Clewell.	Salem Female Academy.	Salem, N. C.
G. K. Bartholomew, A. M., Ph. D.	Bartholomew English and Classical School.	Cincinnati, Ohio.
Chas. F. Thwing, D. D.	Cleveland College for Women.	Cleveland, Ohio.
L. D. Potter, D. D.	Glendale Female College.	Glendale, Ohio.
Clara Sheldon.	Granville Female College.	Granville, Ohio.
D. B. Purinton, LL. D.	Shepardson College.	Do.
Faye Walker, D. D.	Oxford College.	Oxford, Ohio.
Leila S. McKee, Ph. D.	Western College.	Do.
Miss Mary Evans.	Lake Erie Seminary.	Painesville, Ohio.
J. W. Knappenberger, A. M.	Allentown College for Women.	Allentown, Pa.
F. Max Hark, D. D.	Moravian Seminary for Young Ladies.	Bethlehem, Pa.
M. Carey Thomas, Ph. D.	Bryn Mawr College.	Bryn Mawr, Pa.
Harriet L. Dexter.	Metzger College.	Carlisle, Pa.
Samuel A. Martin.	Wilson College.	Chambersburg, Pa.
Charles B. Shultz.	Linden Hall Seminary.	Littitz, Pa.
E. E. Campbell, A. M.	Irving Female College.	Mechanicsburg, Pa.
Frances E. Bennett.	Ogontz School.	Ogontz School, Pa.
R. Jennie De Vere.	Pennsylvania College for Women.	Pittsburg, Pa.
A. H. Norcross, D. D.	Pittsburg Female College.	Do.
J. A. Rice.	Columbia Female College.	Columbia, S. C.
W. R. Atkinson, D. D.	Presbyterian College for Women.	Do.
C. E. Todd.	Due West Female College.	Due West, S. C.
H. P. Griffith.	Cooper-Limestone Institute.	Gaffney City, S. C.
A. S. Townes.	Greenville College for Women.	Greenville, S. C.
M. M. Riley.	Greenville Female College.	Do.
B. F. Wilson.	Converse College.	Spartanburg, S. C.
S. Lander, A. M.	Williamston Female College.	Williamston, S. C.
D. S. Hearon, D. D.	Sullins College.	Bristol, Tenn.
C. A. Folk, A. B.	Brownsville Female College.	Brownsville, Tenn.
Kate McFarland.	Union Female Seminary.	Do.
Robert D. Smith, A. M.	Columbia Athenaeum.	Columbia, Tenn.
S. A. Link, A. M.	Tennessee Female College.	Franklin, Tenn.
J. M. Hubbard.	Howard Female College.	Gallatin, Tenn.
Howard W. Key, Ph. D.	Memphis Conference Female Institute.	Jackson, Tenn.
Chas. C. Ross.	East Tennessee Institute.	Knoxville, Tenn.
N. J. Finney, A. M.	Cumberland Female College.	McMinnville, Tenn.
Miss V. O. Wardlaw, A. M.	Soule Female College.	Murfreesboro, Tenn.
Geo. W. F. Price, D. D.	Nashville College for Young Ladies.	Nashville, Tenn.
J. D. Blanton.	Ward Seminary.	Do.
Judith L. Steele.	Martin Female College.	Pulaski, Tenn.
Wm. M. Graybill, A. M.	Synodical Female College.	Rogersville, Tenn.
Moses E. Wood.	Somerville Female Institute.	Somerville, Tenn.
Z. C. Graves, LL. D.	Mary Sharp College.	Winchester, Tenn.
Charles Carlton.	Carlton College.	Bonham, Tex.
E. H. Wells, A. M.	Baylor Female College.	Belton, Tex.
S. M. Godbey.	Chappell Hill Female College.	Chappell Hill, Tenn.
H. M. Whaling, Ph. D.	Waco Female College.	Waco, Tex.
S. N. Barker.	Martha Washington College.	Abingdon, Va.
Kate M. Hunt.	Stonewall Jackson Institute.	Do.
Samuel D. Jones, B. L.	Southwest Virginia Institute.	Bristol, Va.
Miss M. P. Horsley.	Albemarle Female Institute.	Charlottesville, Va.
C. F. James, D. D.	Montgomery Female College.	Christiansburg, Va.
Chas. L. Cooke.	Danville College for Young Ladies.	Danville, Va.
W. W. Smith, LL. D.	Roanoke Female College.	Do.
J. J. Scherer, A. M.	Hollins Institute.	Hollins, Va.
A. P. Piper.	Randolph-Macon Woman's College.	Lynchburg, Va.
Arthur K. Davis, A. M.	Marion Female College.	Marion, Va.
John H. Powell.	Norfolk College for Young Ladies.	Norfolk, Va.
James Willis, A. M.	Southern Female College.	Petersburg, Va.
Mrs. J. E. B. Stuart.	Richmond Female Institute.	Richmond, Va.
Henry P. Hamill.	Staunton Female Seminary.	Staunton, Va.
John P. Hyde, D. D., LL. D.	Virginia Female Institute.	Do.
Mrs. H. L. Field.	Wesleyan Female Institute.	Do.
Ella C. Sablin.	Valley Female College.	Winchester, Va.
Louise R. Upton.	Parkersburg Seminary.	Parkersburg, W. Va.
	Downer College.	Fox Lake, Wis.
	Milwaukee College.	Milwaukee, Wis.

PART II.

Chap. I.—Agricultural and Mechanical Colleges.

II.—Forestry Instruction.

III.—The Study of Geology in Colleges and Universities.

IV.—The Spelling of Chemical Terms.

V.—The Rise and Progress of Manual Training.

VI.—University Extension.

VII.—Professional Instruction.

VIII.—Education of the Colored Race.

IX.—Digest of School Laws.

X.—Sanitary Legislation Affecting Schools.

XI.—Education in the Several States.

XII.—Report on Education in Alaska.

XIII.—List of Learned and Educational Societies.

XIV.—Criminological Studies.

XV.—Reports of Psychological, Criminological, and Demographical Congresses.

PART II.

CHAPTER I.

COLLEGES OF AGRICULTURE AND THE MECHANIC ARTS.¹

The collection of statistics concerning the expenditure of the funds granted to the several States and Territories for the benefit of colleges of agriculture and the mechanic arts by the act of Congress of August 30, 1890, together with statistics concerning the condition and progress of the various institutions as required by the above-mentioned act, has been continued during the past year. The summarized statistics concerning professors, students, property, etc., are given on pp. 129-132.

Considerable correspondence is still required in order to obtain satisfactory reports from the treasurers of some of the institutions. The law of August 30, 1890, is restrictive and designates the special purposes for which the money authorized by it may be expended. It distinctly states that the money thus appropriated shall "be applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural, and economic science, with special reference to their applications in the industries of life, and to the facilities for such instruction."

Notwithstanding the plain language above quoted, this Bureau has been compelled during the year to order the refunding of sums of money paid out of what is popularly known as the "Morrill fund" for the salaries of treasurer, secretary, and professor of ancient and modern languages. Another item of expenditure which has been disallowed in the few cases in which it had been charged is what is known as "exchange." This is the amount charged in a few States by the banks cashing the checks by which the money granted by Congress is paid to the several States and Territories. Such charge is also held as improper. The law appropriates a certain sum of money to certain institutions for certain purposes, and it is held that the entire sum thus appropriated must be expended for the special purposes mentioned in the act. If any charge is made for cashing the checks, such charge must be paid with other funds.

It is also held that no part of the funds granted by the act of August 30, 1890, can be expended for purely administrative purposes. The law does not establish new institutions, but simply provides for the more complete endowment and support of colleges already established under the provisions of an act of Congress approved July 2, 1862, and does not provide for administrative expenses, but provides that all of the money granted by it shall be used for instruction in certain specified branches of study. In the few cases where new institutions have been called into existence in order to obtain the benefits of the act of August 30, 1890, and where the lands granted by the act of July 2, 1862, have not yet been converted into income-producing property, the several States and Territories where such institutions are located are in duty bound to provide the funds required for administrative purposes and for other necessary expenses not provided for in the act of August 30, 1890.

The expenditures from the Morrill fund for the year ended June 30, 1894, were as follows:

¹ See also Annual Report for 1890-91, p. 579.

Institution.	Amount available for Year ended June 30, 1894.				Disbursements.							Balance on hand July 1, 1894.
	Installment for 1893-94.			Total.	Agriculture.	Mechanic arts.	English language.	Mathematical science.	Natural or physical science.	Economic science.	Total.	
	2	3	4										5	6	7	8	9	10	11
1	12	13	14	15	16	17	18	19	20	21	22	23
Alabama Agricultural and Mechanical College, Auburn, Ala.	\$1,670.77	\$10,677.99	\$12,348.76	\$300.00	\$3,350.00	\$2,350.00	\$556.15	\$4,198.20	0	\$10,354.35	\$1,494.41	
State Normal and Industrial School, Normal, Ala.	819.02	8,322.00	9,141.02	884.34	1,686.87	2,144.58	810.00	1,914.60	\$1,415.60	8,896.99	244.03	
University of Arizona, Tucson, Ariz.	3,108.47	19,000.00	22,108.47	4,453.28	4,968.53	1,775.07	1,268.30	3,746.45	682.90	16,844.53	5,203.94	
Arkansas Industrial University, Fayetteville, Ark.	9,086.22	13,818.18	22,904.40	3,109.35	9,876.29	2,316.75	2,806.65	4,357.48	0	22,526.52	377.88	
Branch Normal College, Pine Bluff, Ark.	7,242.28	5,181.82	12,424.10		3,482.62					3,482.62	8,941.48	
University of California, Berkeley, Cal.	2,402.94	19,000.00	21,402.94	6,383.07	8,507.06	25.19		6,487.62	0	21,402.94	0	
Colorado Agricultural College, Fort Collins, Colo.	43.96	19,000.00	18,996.04	896.87	2,320.77	2,770.50	1,250.00	7,041.70	4,500.00	18,779.84	216.20	
Sheffield Scientific School, New Haven, Conn.	0	0	0	0	0	0	0	0	0	0	0	
Delaware College, Newark, Del.	1,273.84	15,200.00	16,473.84	1,514.56	5,478.73	2,337.40	1,849.98	3,275.73	1,875.00	16,331.40	142.44	
State College for Colored Students, Dover, Del.	0	3,800.00	3,800.00	1,146.86	526.15	526.45	548.22	915.00	186.90	3,849.58	649.58	
Florida Agricultural College, Lake City, Fla.	0	9,500.00	9,500.00	1,120.81	2,153.04	1,649.33	1,359.03	1,253.91	1,580.06	9,116.18	383.82	
State Normal and Industrial College for Colored Students, Tallahassee, Fla.	0	9,500.00	9,500.00	2,539.49	1,285.51	2,976.00	1,355.00	644.00	700.00	9,500.00	0	
Georgia State College of Agriculture and Mechanic Arts, Athens, Ga.	1,904.25	12,665.66	14,570.91	2,834.97	2,200.00	1,100.00	1,110.50	4,200.00	1,690.40	13,135.87	1,435.04	
Georgia Industrial College for Colored Youth, College, Ga.	6,199.43	6,323.34	12,522.77	1,501.72	2,207.51	1,893.36	733.37	999.96		7,275.92	5,256.85	
University of Idaho, Moscow, Idaho	4,500.49	19,000.00	23,500.49	1,820.00	4,868.84	5,297.93	1,679.99	8,391.04		21,997.80	1,502.69	
University of Illinois, Champaign, Ill.	1,711.83	19,000.00	20,711.83	507.02	10,402.16	1,109.10	1,373.53	8,564.54	0	19,958.36	763.48	
Purdue University, Lafayette, Ind.	0	19,000.00	19,000.00	736.66	0	1,333.36	4,198.69	5,038.65	900.00	19,000.00	0	
Iowa Agricultural College, Ames, Iowa	732.73	19,000.00	19,732.73	7,049.94	3,399.96	4	1,066.64	6,574.86	533.32	18,624.72	1,108.01	
Kansas Agricultural College, Manhattan, Kans.	61.00	19,000.00	19,061.00	3,121.06	4,640.25	3,433.31	3,290.98	4,556.67	0	19,060.27	.78	
Kentucky Agricultural and Mechanical College, Lexington, Ky.	73.48	16,245.00	16,318.46	2,914.00	4,140.50	1,407.50	1,497.50	4,606.00	1,407.50	16,243.00	75.46	
State Normal College, Frankfort, Ky.	6109.97	2,755.00	2,864.97	31.10	2,225.63	400.00	0	0	592.70	3,157.43	292.46	
Louisiana State University and Agricultural and Mechanical College, Baton Rouge, La.	2,611.20	9,201.00	11,812.20	629.72	106.82	45.16	2,500.00	6,392.23	0	9,680.93	2,131.27	
Southern University, New Orleans, La.	0	9,700.00	9,700.00	3,164.56	1,952.00	1,296.00	1,329.34	1,157.10	900.00	9,799.00	0	
Maine State College of Agriculture and Mechanic Arts, Orono, Me.	672.03	19,000.00	19,672.03	2,663.33	6,056.04	1,350.06	1,790.21	6,807.31	1,042.30	19,658.25	13.78	

Maryland Agricultural College, College Park, Md.	185 89	19,000.00	19,185.89	3,373.92	3,202.14	2,686.15	4,910.62	865.53	19,185.89	0
Massachusetts Agricultural College, Amherst, Mass.	5,735.16	12,666.66	18,401.82	7,286.29	2,126.24	3.26	8,965.33	11.15	18,392.27	9.55
Massachusetts Institute of Technology, Boston, Mass.	600.00	6,333.34	6,933.34	0	2,400.00	3,000.00	1,500.00	0	6,900.00	33.34
Michigan Agricultural College, Agricultural College, Mich.	0	19,000.00	19,000.00	6,200.00	1,800.00	1,400.00	4,900.00	950.00	19,000.00	0
University of Minnesota, Minneapolis, Minn.	0	19,000.00	19,000.00	5,725.52	941.20	1,248.15	3,433.00	921.00	19,000.00	0
Agricultural and Mechanical College of Mississippi, Agricultural College, Miss.	1,146.40	8,523.95	9,670.35	2,536.36	1,331.55	1,609.50	1,580.40	704.63	9,670.35	0
Alcorn Agricultural and Mechanical College, Westside, Miss.	2,152.39†	10,476.05	12,628.44‡	912.96	2,395.49	2,399.94	1,676.29	2,277.71	12,631.84	c 3.39‡
University of the State of Missouri, Columbia, Mo.	3,160.41	13,484.33	d 19,320.41	1,000.00	3,698.37	1,972.63	6,373.65	3,883.32	18,562.37	758.04
School of Mines and Metallurgy, Rolla, Mo.	9.53	4,494.77	4,504.30	0	953.20	766.60	2,134.94	0	4,430.68	73.62
Lincoln Institute, Jefferson City, Mo.	383.58	1,020.90	1,414.48	103.20	1,152.87	0	0	0	1,254.07	158.41
Montana College of Agriculture, and Mechanical Arts, Bozeman, Mont.	18,000.00	19,000.00	37,000.00	5,395.99	1,861.95	4,233.27	4,750.77	2,047.15	19,948.97	17,053.03
University of Nebraska, Lincoln, Neb.	428.78	19,000.00	e 19,628.78	25.00	3,558.04	3,222.85	6,358.70	1,463.32	19,004.77	624.01
University of Nevada, Reno, Nev.	0	19,000.00	19,000.00	25.00	3,558.04	3,222.85	6,358.70	1,463.32	19,000.00	0
New Hampshire College of Agriculture and Mechanical Arts, Durham, N. H.	2,049.26	19,000.00	21,049.26	933.46	5,047.59	1,806.44	7,347.25	1,752.50	20,789.52	259.74
Rutgers Scientific School, New Brunswick, N. J.	7.13	19,000.00	19,007.13	2,263.82	0	6,267.21	7,218.44	1,290.85	19,005.33	1.80
College of Agriculture and Mechanical Arts, Las Cruces, N. Mex.	22,016.22	19,000.00	41,016.22	1,262.04	2,951.50	4,498.50	4,152.47	982.09	17,773.08	23,243.14
Cornell University, Ithaca, N. Y.	619.92	19,000.00	19,619.92	4,690.86	9,500.00	1,000.00	4,000.00	0	19,100.86	429.06
North Carolina College of Agriculture and Mechanical Arts, Raleigh, N. C.	0	12,338.60	12,338.60	3,635.38	4,185.51	1,860.39	2,667.32	0	12,338.60	0
Agricultural and Mechanical College for the Colored Race, Greensboro, N. C.	11,684.23	6,661.40	18,345.63	935.00	803.00	1,546.00	0	0	3,344.00	15,001.63
North Dakota Agricultural College, Fargo, N. Dak.	3,403.81	19,000.00	22,403.81	6,862.34	2,354.18	1,891.69	6,908.65	210.00	19,566.33	2,834.48
Ohio State University, Columbus, Ohio.	130.75	19,000.00	19,130.75	3,186.76	11,897.76	545.00	2,769.97	315.00	19,084.49	46.26
Oklahoma Agricultural and Mechanical College, Stillwater, Okla.	10,749.00	19,000.00	29,749.00	3,025.38	0	1,210.72	2,152.06	2,409.64	12,101.19	17,647.81
Oregon State Agricultural College, Corvallis, Oreg.	0	19,000.00	19,000.00	1,847.50	4,335.11	1,800.00	4,072.55	1,913.24	19,000.00	0
Pennsylvania State College, State College, Pa.	a5,652.07	19,000.00	13,347.93	1,723.87	2,914.72	2,140.13	4,257.22	0	11,296.54	2,051.39
Rhode Island College of Agriculture and Mechanical Arts, Kingston, R. I.	0	85,000.00	85,000.00	2,535.84	9,569.28	1,898.33	6,385.05	98.51	23,100.57	61,899.43
Clemson Agricultural College, Clemson College, S. C.	30,462.29	9,500.00	39,962.29	6,440.49	15,222.21	3,945.23	7,883.24	1,555.53	39,899.82	72.47
Gladin University, Orangeburg, S. C.	5,761.15	9,500.00	15,261.15	3,077.67	1,299.87	1,500.00	2,632.20	1,900.00	13,533.45	1,727.70

a Deficit.

b Includes a rebate of \$10.

c Deficit; charged to fund for 1894-95.

d Includes \$2,666.67 refunded by the university.

e Includes \$200 refunded by J. S. Dales, treasurer.

Institution.	Amount available for year ended June 30, 1894.			Disbursements.								Balance on hand July 1, 1894.
	Balance on hand July 1, 1893.	Installment for 1893-94.	Total.	Agriculture.	Mechanico arts.	English language.	Mathematical science.	Natural or physical science.	Economic science.	Total.		
1	2	3	4	5	6	7	8	9	10	11	12	
South Dakota Agricultural College, Brookings, S. Dak.	\$5,171.26	\$19,000.00	\$24,171.26	\$2,929.63	\$2,851.53	\$3,124.50	\$2,341.02	\$0,235.66	\$3,610.77	\$21,003.71	\$3,077.54	
University of Tennessee, Knoxville, Tenn.	8,813.45	19,000.00	10,186.55	3,987.50	4,152.10	2,350.00	4,341.33	4,837.44	579.00	20,247.37	10,000.82	
Agricultural and Mechanical College of Texas, College Station, Tex.	1,156.75	14,250.00	15,406.75	2,484.39	6,949.83	0	4,949.97	969.97	0	15,354.26	52.49	
Prairie View State Normal School, Hempstead, Tex.	3,555.73	4,750.00	8,305.73	1,563.60	1,099.90	1,645.72	1,536.81	882.16	599.94	7,328.13	977.60	
Agricultural College of Utah, Logan, Utah.	10,742.38	19,000.00	29,742.38	5,230.72	5,439.72	4,447.37	3,800.43	3,466.67	3,924.56	26,309.47	3,432.91	
University of Vermont and State Agricultural College, Burlington, Vt.	0	19,000.00	19,000.00	3,360.00	3,500.00	1,750.00	2,750.00	5,390.00	2,250.00	19,000.00	0	
Virginia Agricultural and Mechanical College, Blacksburg, Va.	0	12,668.66	12,668.66	750.00	4,983.33	1,300.00	2,100.00	2,983.33	550.00	12,668.66	0	
Hampton Normal and Agricultural Institute, Hampton, Va.	135.28	6,333.34	6,468.62	1,673.15	2,541.98	650.00	600.00	900.00	0	6,365.13	103.49	
Washington Agricultural College and School of Science, Pullman, Wash.	3,808.45	19,000.00	22,808.45	1,199.46	5,129.39	4,341.74	3,281.82	2,937.47	3,754.29	20,664.17	2,144.28	
West Virginia University, Morgantown, W. Va.	22,082.46	16,000.00	38,032.46	808.90	15,722.44	1,189.20	3,761.72	6,643.68	5.00	28,130.94	9,901.52	
West Virginia Colored Institute, Farm, W. Va.	2,033.15	3,000.00	5,033.15	403.94	2,073.68	542.23	1,030.55	38.43	0	4,088.83	944.32	
University of Wisconsin, Madison, Wis.	0	19,000.00	19,000.00	7,600.00	7,600.00	800.00	800.00	1,000.00	1,200.00	19,000.00	0	
University of Wyoming, Laramie, Wyo.	3,253.62	19,000.00	22,253.62	1,819.67	5,002.09	3,486.23	1,025.31	6,470.54	2,675.05	20,478.89	1,774.73	

a Deficit.

Since the passage of the act of August 30, 1890, the legislatures of several States have taken the funds derived from the acts of July 2, 1862, and August 30, 1890, from the institutions which had formerly held them and established new institutions. In New Hampshire the funds were taken from Dartmouth College, at Hanover, and a new institution established at Durham. In Rhode Island, Brown University, at Providence, relinquished the funds to a new college established at Kingston. In Connecticut there is at present a legal contest between Yale University and the State of Connecticut, due to the fact that the legislature has passed an act making the Storrs Agricultural College, at Storrs, the beneficiary under the acts of July 2, 1862, and August 30, 1890. In the two Carolinas the agricultural departments have been taken from the State universities and new institutions established at Raleigh, N. C., and at Fort Hill, S. C.

The reports received from the presidents of the institutions included under this category show that the institutions are in a flourishing condition and are doing good work, as will be seen from the following abstracts taken from said reports:

Agricultural and Mechanical College of Alabama, Auburn, Ala.—The material improvements made during the year were the construction of a barn and a tobacco house at the experiment station, and the building of an electrical laboratory and also a veterinary laboratory on the campus. The equipment of the scientific departments was increased with valuable apparatus. At the close of the session there were 50 graduates, 38 receiving the degree of bachelor of science, and 12 postgraduate degrees. Among the graduates were 3 young women, the first female graduates of this college.

State Normal and Industrial School, Normal, Ala.—In our last report the condition of the school was good and the prospects for another year bright. The anticipated has been fully realized both in the literary and in the industrial departments. Eighteen were graduated from the literary department. Our graduates and undergraduates are doing a good work throughout the State. Nearly all the important towns in North Alabama are supplied with teachers from this institution, and their efforts are being crowned with abundant success. The industrial department is well planned and the work well done. Eighteen were graduated from this department, making the total number of graduates for the year 36. During the year a large building for the mechanic arts department and cottages have been erected by the students, and another still larger building for dormitory purposes is now in course of erection. The various industrial departments are well patronized by the surrounding community; wagons, buggies, farm implements, boots, shoes, dresses, etc., being satisfactorily made. There is marked improvement in every department.

University of Arizona, Tucson, Ariz.—A reorganization of the university occurred May 30, 1894, and Dr. Theo. B. Comstock, acting last year as the president of the faculty, was unanimously elected president of the university, with duties of a chief executive officer, supervising all departments. The three main divisions of the university are (1) the university proper (educational), (2) the bureau of mines (for investigation), and (3) the agricultural experiment station (for investigation). The number of students has greatly increased, and indications are that many more will enter in September, 1894. Heretofore it has not been feasible to furnish boarding accommodations for students, but this serious defect has now been remedied. The first senior class will be graduated in 1895.

Arkansas Industrial University, Fayetteville, Ark.—The department of classic languages (Latin and Greek) has been divided, a professor of Latin elected, and the faculty increased by an additional member. The teaching force in practical mechanics has been improved. A new brick laboratory building for chemistry and physics has been erected, and additions made to the equipment in chemistry, physics, biology, mineralogy, geology, mechanics, and engineering. There is a very marked increase in the thoroughness and efficiency of the military department. Arrangements have been perfected for accrediting a large number of high schools to the university. This, it is believed, will increase the number in collegiate classes and diminish that

in the preparatory classes. The university is becoming more widely and favorably known throughout the State.

State Agricultural College, Fort Collins, Colo.—The year has been one of marked progress and improvement along all lines, new buildings have been erected, old ones remodeled, additional appliances have been purchased for all departments, and much done to elevate and strengthen the educational tone of the institution. The enrollment of students shows a gratifying increase over that of previous years, and altogether the college may be said to have had a very satisfactory year. The work of the experiment station has been pushed with diligence, and the work is partially evidenced by the bulletins issued. There is a vast amount of work that has been performed or is still progressing, the results of which will be published as soon as practicable.

State College for Colored Students, Dover, Del.—Nothing worthy of special notice has occurred during the year, excepting that women have been admitted as day students. The farm has been improved in fertility and general appearance and some additions have been made to the equipment of the shop.

Florida Agricultural College, Lake City, Fla.—The year has been one of activity and prosperity. All departments of the college have been doing good work. Complete agricultural and mechanical courses of study have been adopted and introduced, and the equipment for the mechanical department has been much improved. The attendance for the year was 187, an increase over the preceding year of more than 125 per cent.

Georgia State College of Agriculture and the Mechanic Arts, Athens, Ga.—The condition of the college is satisfactory. It has an efficient corps of competent and enthusiastic officers and the educational work done by it is sound and of a high grade. Paucity of students still continues to be the chief discouraging feature of our work. For the past session this may be in part accounted for by the real or fancied financial depression of the year. It is mainly due, however, to the lack of preparatory schools, especially in the rural districts. Moreover, the superior advantages in profit and pleasure as yet afforded in this State by mercantile pursuits and other professions operate to deter a large number of students from entering the technical courses provided by this college. The preparatory instruction introduced during the past year has aided in securing a number of students who otherwise could not have entered the institution. The winter course in agriculture is an acceptable feature, but the number of students is still small. Farmers' institutes, under the auspices of the college, were held during the year at 21 places. The attendance was large and the interest manifested gratifying. The officers of the college take advantage of these meetings to encourage among the people a desire and demand for technical education.

University of Idaho, Moscow, Idaho.—During the year ending June 30, 1894, the University of Idaho enjoyed a year of remarkable prosperity. Notwithstanding the hard times which necessarily affect the inhabitants of a new State more seriously than the older communities, the attendance was largely in excess of the previous year. The faculty was increased to 11 at the beginning of the scholastic year, September 20, 1894. The detail of an army officer as professor of military science and tactics makes a faculty of 12 professors and instructors. The director of music is not a member of the faculty, as his department is a private enterprise and dependent wholly upon tuition receipts for support.

The library during the year received a number of books by purchase and donation; the technical libraries were largely increased by the purchase of works of the latest authorities. During the year the laboratories received additional equipment, the biological receiving the most attention. The crowning feature of the year was the partial completion of the main part and wing of the main or administration building. About thirty-three rooms are now available for scholastic purposes. Laboratory facilities for next year will be largely increased. A suit of four rooms is devoted to chemical laboratory (for instruction and station work), one room is devoted to

zoological laboratory, one to botanical, one to physical, and one to agricultural. These rooms have water, sewers, light, and gas. The apparatus is not so extensive as could be desired, but everything is well selected and well adapted to our demands. The assaying furnaces are temporarily located in the chemical laboratory and in a room not now in general use. A class of seven was formed in agriculture, the preparatory course.

Peace and harmony prevail within the institution. Faculty is able and progressive. The work done is of an excellent order.

University of Illinois, Champaign, Ill.—The year ending June 30, 1894, was conspicuously the most successful one in the history of the university, as indicated by the number of students and of instructors, by the expenditures for buildings and equipment, and by published reports and documents. The increase in the number of students over the preceding year was 29, while the increase in the number of instructors was 17. Engineering hall, the best building on the campus, is nearing completion.

Purdue University, La Fayette, Ind.—The new mechanical engineering building, which was completed in the early part of January, was partly destroyed by fire on the night of January 23, 1894, the loss being estimated at \$150,000. The laboratories connected with the building destroyed have been reconstructed, and all the apparatus and machinery necessary to equip the same have been purchased. The number of students has increased to 682. The preparatory department, which has been greatly reduced during the past year by stringent requirements, will not be maintained in the future.

Iowa Agricultural College, Ames, Iowa.—The year 1894 has been one of healthy condition and marked progress. About \$10,000 have been expended in refitting the dormitories; the two upper floors of the main building were made entirely new by new lathing, plastering, and woodwork; a new experimental barn at a cost of \$4,000 has been completed; a new ladies' hall is in process of erection, and will cost about \$50,000; a new athletic grounds, embracing 12 acres, have been laid out and graded. The school year has been noted for thrift and general progress, both among our students and the faculty. The graduating class numbered 63—the largest in the history of the college.

Kansas State Agricultural College, Manhattan, Kans.—The college year 1893-94 has been a prosperous one in the stability of an efficient faculty, an attendance fully up to reasonable expectations, an excellent body of post-graduate students, a greatly enlarged provision for departments of botany and zoology, with library and museum facilities for all departments, and an improved course of study. The new buildings will be ready for occupancy before the opening of college in September, 1894, and promise superior advantages for an increased number of students. During the winter a special course of 36 lectures to farmers was given at the college and attended by about 40 farmers, mostly from the immediate neighborhood. Fifteen farmers' institutes were held in various parts of the State, under the auspices of the college, without aid from State funds.

Agricultural and Mechanical College of Kentucky, Lexington, Ky.—The board of trustees in June, 1894, established a chair of physics. The department of mechanical engineering has attracted much attention, both locally and throughout the State, by the excellence of its equipment and the excellence of its training. Satisfactory work has also been done in all the departments of natural science. A popular course of lectures on agriculture, including agricultural chemistry, horticulture, entomology, veterinary science, etc., was carried on during the year with satisfactory results.

State Normal School for Colored Persons, Frankfort, Ky.—A new mechanical shop costing \$766 was erected, and the dormitory completed. The enrollment was greater than that of any previous year. Some valuable practical experiments were made in the agricultural department.

Louisiana State University and Agricultural and Mechanical College, Baton Rouge, La.—The session of 1893-94 has been a most satisfactory one in the increased number

and improved progress and deportment of students. The students have choice of five parallel courses of study, in which the aim is to combine theory and practice as much as possible. The course in mechanics and engineering is the most popular. In this and the course in agriculture students receive one year's training in the machine shop. The agricultural course is thorough. We have no farm on which the students labor, but they study the experiments in connection with the theory of the classroom, and the facilities for shop and laboratory work are becoming more useful every year.

Southern University, New Orleans, La.—In the interest of the higher grades of this institution, the board of trustees, in October, 1893, discontinued the very lowest grades, containing about 250 younger pupils, leaving 304 pupils in the school. The college department at the same time was advanced. All departments have improved during the session. At the close of the session a bequest of \$3,000 for the general use of the University was received and \$300 was appropriated from the Peabody fund. The legislature appropriated \$8,000 to purchase a farm of 100 acres, which was hitherto rented by the college at \$800 per annum. The school is steadily moving forward. The agricultural and mechanical department is quite young, but both sections are hard at work training, developing, and educating the classes in their respective pursuits.

Maine State College of Agriculture and Mechanic Arts, Orono, Me.—The condition of the college is satisfactory and its progress encouraging. It has had more students than ever before, and its work has been well done. New courses have been established, known as the electrical engineering, library economy, pharmacy, and preparatory medicine.

Maryland Agricultural College, College Park, Md.—The condition and progress of this institution is encouraging. There were enrolled 123 students, against 108 for the previous year. A substantial brick building was erected during the year, the lower story of which has been fitted up for and is used as a gymnasium, while the second floor makes a bright and roomy library. Nine young men received the degree of B. S. in June, 1894.

Massachusetts Agricultural College, Amherst, Mass.—The condition of the college during the year has been exceedingly prosperous. We enrolled 214 students—the largest number in the history of the college—while the graduating class, 33 in number and more than 15 per cent of all the students in attendance, is the largest ever graduated from the institution. An assistant in zoology and a second assistant in botany and horticulture have been added to the faculty, making a total of 18 professors and assistants. The results of the elective system in the studies of the senior year have been most gratifying. Not only has there been a marked increase in the interest shown in study by the members of this class, but this interest has been communicated to the other classes also, so that a general quickening of the intellectual life of the students has been apparent. Twenty-three students were enrolled in the two years' course, and the practical character of the instruction received has been fully appreciated by them. Valuable courses of lectures were given by Sir Henry Gilbert, of the Rothamsted Station, England; by Dr. B. E. Fernow, and by Maj. Henry E. Alvord. New barns, costing \$36,000, were erected during the year. These include a main fodder barn, with wings for cattle, sheep, and swine, and a horse barn. In connection with the main barn a dairy school has been equipped, in which practical instruction will be given to students. The old barn, erected in 1869, was destroyed by fire on June 8, 1894. The most serious loss in connection with the fire was that of valuable agricultural implements that had been secured as a nucleus to an agricultural museum.

Massachusetts Institute of Technology, Boston, Mass.—There were enrolled 1,157 students—an increase of 97 over 1892-93. A new course of study in naval architecture has been successfully inaugurated. The graduating class was the largest in the history of the institution. Land to the value of \$277,000 has been purchased, to

allow for future expansion, but the scanty means of the Institute made it necessary to put a mortgage of \$240,000 on land and buildings to secure the purchase money.

Michigan State Agricultural College, Agricultural College, Mich.—There were few changes in the regular courses of study during the year. A special course in dairy husbandry was inaugurated, commencing the first week in January and continuing six weeks. On account of limited room only 25 pupils could be accommodated. The success which was accorded the course demonstrates the desirability of dairy instruction in this State. Among the improvements during the year are the following: Addition of over 1,000 volumes to the library; the building of an additional gallery in the library; the erection of a foundry; the rearrangement of and new equipment for the blacksmith shop; increased room in the woodworking shop; a 50-horsepower engine for running the machinery of the shops (built by the students); 40,000 feet of stone walk were laid; a new sewer system put in; and an electric-light plant instituted for lighting the grounds and the corridors of the dormitories. A large amount of new apparatus for the various laboratories was purchased. The general condition of the college is excellent.

University of Minnesota, Minneapolis, Minn.—The agricultural department is in a more prosperous condition than ever before. A new building, costing \$30,000, was erected in 1893 and has been used during the present year as a drill hall for the students in the school of agriculture. Military science and drill have been successfully introduced and have been taken by the students with much enthusiasm. Blacksmithing has been added to the course of study. The shopwork has been enlarged. Much more attention has been paid to practical agriculture than heretofore. The course in breeding and stock raising has been extended and improved. Large numbers of experiments in horticulture and agriculture have been in progress at the experiment station and have been open to the observation of the students. The teaching force has been enlarged and the total number of students has risen to more than 200 devoted exclusively to the work of agriculture. The training of the school continues to fit the students for practical work on the farm, many of the students who have not completed the course spending the summer in supplementary work at the university farm, and all the graduates going to their homes to secure farm work. The university will ask the coming legislature for further appropriations for buildings, as the present accommodations are inadequate to meet the needs of the increasing number of students. The experiment station, the college of agriculture, and the school of agriculture have been conducted with absolute harmony, and the promise for the future is very bright.

Agricultural and Mechanical College of Mississippi, Agricultural College, Miss.—The session of 1893-94 has been most satisfactory. The prescribed courses in agriculture and in mechanic arts run parallel to each other, and students are permitted to select which they prefer. Experience shows that they divide about equally between the two courses. The facilities for practical work are becoming more attractive and useful to the students. Every student is compelled to do work in the field, shops, or laboratories.

Alcorn Agricultural and Mechanical College, Westside, Miss.—A large two-story frame building for recitation and dormitory purposes has been completed. A well-equipped printing office has been added. Courses of study in printing, blacksmithing, and carpentry have been arranged. Lands on the farm have been cleared, graded hogs and cows bought, and the farm department is in better condition than ever before. At the last meeting of the board of trustees they granted a shoemaking department, raising horses, a business course, and other improvements. The outlook of the school is hopeful.

School of Mines and Metallurgy of the University of the State of Missouri, Rolla, Mo.—The last year was the most prosperous in the history of the school. The number of students has more than doubled in five years, and there has been a notable advance in their grade and capacity. A new mining and metallurgical laboratory is being

built, a new chair of mining and metallurgy has been added, the courses of study have been greatly strengthened, and entrance requirements have been somewhat advanced.

Montana College of Agriculture and Mechanic Arts, Bozeman, Mont.—We have as yet received nothing from the sale of public lands. An appropriation of \$15,000 for the institution was made by the last legislature, but owing to the fact that the previous legislative appropriation made exceeded the amount that the State constitution allows the appropriation was not available. In consideration of this fact, Mr. Nelson Story, of Bozeman, placed the Bozeman Academy building at the disposal of the college. The Bozeman school board likewise gave us space in the Bozeman high school building, so that we have been able to carry on the work of the institution. Owing to the excellent system of public schools in this neighborhood, we have had a very desirable class of students apply for entrance, and we have no cause to complain of the outlook for the future of the institution. The work this first year has been largely preparatory, and it has not been necessary to equip some of the departments in consequence. Our chemical and engineering departments are well supplied with apparatus. Our physical, veterinary, and business departments are fairly equipped. Other departments, including the mechanical, will receive attention the coming year.

University of Nebraska, Lincoln, Nebr.—The changes in condition and progress of the Industrial College have been neither many nor striking. The college has received its full proportion of the entire number of students, especial gains being made in the departments of agriculture, horticulture, and electrical engineering. The number of students in shopwork has largely increased. The addition of ample facilities for forge work (at an expense of \$1,600 for addition to building and about \$2,500 in equipment) has quickened the interest of both students and the public in this department. The only enlargement of work is shown in a three years' course in architecture, which is meeting with much favor.

State University of Nevada, Reno, Nev.—This was the most successful year in the history of the institution. The faculty was increased by 1, making the entire number 18; the number of students was 192. The standard was raised at the beginning of the year, and thorough, substantial work was done in all departments. A quartz mill was erected for the mining department, and now the graduates are fairly proficient in mining, metallurgy, and assaying. The mechanical department, with its opportunities for work in wood and iron, continues very popular among the students.

New Hampshire College of Agriculture and the Mechanic Arts, Durham, N. H.—The first year in the new location has been marked by a decided advance. Of the 51 members of the freshmen class, 20 have taken the agricultural course. During the winter an institute course in agriculture was carried on with a maximum attendance of 100. This was free and open to all without examination. Progress has been made in extending the study of agriculture by a nonresident course. The results, while at present tentative, are gratifying, as students are enrolled from all parts of the country. The buildings are practically completed and have been in constant use during the year.

Rutgers College, New Brunswick, N. J.—Special attention has been given in the extension department during the year to agricultural work. Five courses in agriculture and 1 course in botany, each course of 6 lectures, have been given. The total attendance at the 36 lectures was 388 persons, and the average attendance 309. The total attendance at the class hours was 379 persons, and the average attendance 292.

New Mexico College of Agriculture and Mechanic Arts, Las Cruces, N. Mex.—The organization and equipment of the college has been made more complete. The most notable event of the year was the graduation of the first class of 4 young men and 1 young woman. Of these, 3 had pursued the course in agriculture, 1 the course in civil engineering, and 1 the ladies' course. One of them, a native Mexican, was immediately employed as assistant to the agriculturist on the farm; another is foreman and

partner on the largest alfalfa and stock ranch in the valley; and the other 3 are teachers in the common schools of the Territory. The college continues to lack buildings necessary for the proper conducting of the several departments. Owing chiefly to financial depression, the attendance at the college has not been quite so large as during the previous year, but the work and the college spirit have improved greatly.

Cornell University, Ithaca, N. Y.—Through the generosity of Hiram W. Sibley, a new building for the use of the college of mechanic arts was erected at an expense of \$55,000. An appropriation of \$50,000 by the legislature for a dairy husbandry building furnished means for the erection of a two-story building (45 by 90) of white sandstone. A very complete museum of classical archaeology was dedicated. Two new assistant professors in geology were appointed. A short course in agriculture, extending through the winter term, was attended by 61 special students.

North Carolina College of Agriculture and the Mechanic Arts, Raleigh, N. C.—The college now closes its fifth year with an attendance of 192 students and a graduating class of 8. There have now been 27 graduates, 20 in the mechanical course and 7 in the agricultural course. Of all these not one is idle, but all are self-supporting in honorable employment, which would indicate that this college is fulfilling its mission so far, and it is certainly growing in popular favor. The faculty has been increased, and it has been found necessary to have a preparatory department with 1 tutor. The agricultural department has been greatly advanced during the past session and is increasing in popularity with the student body which has heretofore greatly preferred the mechanical course.

Agricultural and Mechanical College for the Colored Race, Greensboro, N. C.—This college began its first session as a separate and distinct institution on November 6, 1893; but as the plastering was still incomplete, and the heating apparatus not placed in position, very little could be done until January 2, 1894. After that date the school opened with splendid prospects of success, and students continued to come until the close of the session. The number enrolled was 56.

North Dakota Agricultural College, Fargo, N. Dak.—During the year the main building was completed and a dormitory, mechanical laboratory, farmhouse, and barn erected. With the added conveniences the work of the college is now carried on thoroughly, following rigidly the lines of requirements of the acts of Congress creating and endowing agricultural colleges.

Ohio State University, Columbus, Ohio.—There were 383 students in the technical schools. Of this number 72 were in the school of agriculture, 265 in the school of engineering, 9 in the school of veterinary medicine, and 36 in the school of pharmacy. Numerous additions were made to the equipment of the school of agriculture. The outfit of the shops was increased by \$10,000 worth of new tools and machines. The courses in mechanical and electrical engineering were so modified as to admit of a considerable addition to the amount of shopwork required in those courses.

State Agricultural College of Oregon, Corvallis, Oreg.—The work of the college has been very satisfactory. The number of students in the advanced classes has greatly increased. A number of farmers' institutes have been held in different parts of the State, and a farmers' short course of one month has been added to the work of the college. This course was well patronized last winter.

Pennsylvania State College, State College, Pa.—It is gratifying to be able to report that the same general and steady growth which the college has experienced for several years past has continued during the year ending June 30, 1894. The number of students was larger than ever before, with a corresponding increase in the teaching force and equipment, and the class entering in September, 1893, had, on the whole, a better preparation than any preceding class.

At the opening of the college year the new engineering building, which constitutes the most important addition yet made to the facilities for instruction, was ready for use and fully occupied. It is built of red pressed brick, with brownstone

trimmings. It is of massive, substantial appearance, its only pretension to ornamentation being the use of brown sandstone, to accentuate certain features, and the finials and crockets which mark the backbone and ribs of the structure. These break the monotony of straight lines and give an added touch of color to the whole. The most striking feature of the front is the great stone arched entrance supported on short cylindrical columns on either side and extended above into projection from the rooms of the different floors.

The building is three stories high, with basement under the whole, having in the rear a wing of one story and attic. It faces the roadway a total length of 266 feet and extends 208 feet to the rear, making a total of 50,824 square feet, or about 1 acre. The floor space covers more than 2½ acres, with 57 different rooms.

The building was originally designed to accommodate only the two departments of civil engineering and mechanical engineering, and all its appointments of lecture rooms, offices, laboratories, shops, drafting rooms, museums, department libraries etc., are admirably adapted to the purposes intended, and it is generally conceded to have no superior in the United States. At present, however, owing to lack of suitable quarters elsewhere, the two departments of electrical engineering and mining engineering are temporarily accommodated in the same building.

A few important changes in the courses of instruction were inaugurated at the beginning of the year. The first of these changes was the separation of the department of electrical engineering from that of physics, of which it had previously been a branch, and the erection of it into an independent department with its separate equipment and teaching force. It took rank at once as one of the strongest and most popular departments of the institution.

Another highly important change was the establishment of a department of mining and geology, for which the legislature of 1893 made provision. This department immediately drew students from other courses, and gives promise of meeting a urgent want. Its usefulness to the public has been greatly increased by the publication and free distribution of a quarterly bulletin, largely devoted to subjects of practical mining interest.

One of the most interesting and significant features of the year's work has been the rapid development of the short courses in agriculture and dairying. These courses are confined to the winter session exclusively; are open to any persons of good moral character without examination as to educational qualifications, and the instruction relates almost entirely to practical subjects, so that the information acquired can be applied directly to the daily work of the farm. All instructors who have had these branches in charge express in the highest terms their surprise and gratification at the eagerness and success with which these students, many of them without careful previous training, grasp comparatively difficult subjects. I am strongly inclined to believe that in this direction, with such modification and development as experience may suggest, will be found eventually a key to the solution of the difficult problem of education in agriculture.

The increase in the number of teaching force over the previous year was 9, and in that of the experiment station staff, 2.

Rhode Island College of Agriculture and Mechanic Arts, Kingston, R. I.—The institution has made especial progress in its mechanical department during the past year. The other departments have been well sustained.

Clemson Agricultural College, Clemson College, S. C.—The mechanical building has been enlarged and more fully equipped at a cost of \$10,000. A dairy and cheese factory has been completed at a cost of about \$5,000. The main building was destroyed by fire May 22, 1894. A new building is in process of erection and will be ready for use by February 15, 1895. The farm has been enlarged by the purchase of 285 acres of land at a cost of \$10,000, making a total of about 1,100 acres belonging to the college.

Clafin University, Orangeburg, S. C.—We have developed especially in the department of mechanic arts. The plant is large and complete. Nearly all students at

required to take full courses in from two to four departments. The outlook for both the agricultural and mechanical departments is encouraging.

South Dakota Agricultural College, Brookings, S. Dak.—The young men's dormitory has been transformed into a laboratory for the botanical department, class rooms for mechanical drawing and for the work in industrial art, and for the library. The old quarters of the library have been converted into a physical laboratory. A system of waterworks was also provided, by which all parts of the institution have been furnished with an abundance of good water.

University of Tennessee, Knoxville, Tenn.—The university made marked progress during the year. The noteworthy departure of the year was the admission of women to the academic department of the university with all privileges of scholarships, etc. Women have to be 17 years of age and meet the same requirements with regard to admission as men. Fifty-six women were admitted to the freshman, sophomore, and junior classes of the various courses and made an excellent record for both work and conduct. A separate building was fitted up with reading rooms, study rooms, society hall, lunch room, and toilet room for their exclusive accommodation while at the college. They boarded in private families in town selected by the faculty.

The attendance upon the college of agriculture and mechanic arts was the largest in the history of the institution, reaching a total of 334 for the year.

Among the material improvements which have been ordered and are now under way are an office and dormitory building on the college farm for the accommodation of agricultural students, and a drill and athletic ground. The new dormitory will contain ample accommodations for the special agricultural students who have hitherto had to live with the other students in the regular college dormitories, together with dining rooms, kitchens, and other facilities for their cooperative boarding club. Its location on the college farm will enable them to give much closer attention to the practical work of the department.

Agricultural and Mechanical College of Texas, College Station, Tex.—The attendance during the past session was at all times as great as our accommodations warrant. A characteristic feature added was the provision made by the legislature for additional student labor; the larger part was educational, for which no compensation was allowed. Students performed noneducational labor when required by the college and received compensation according to industry, faithfulness, and efficiency.

Prairie View State Normal School, Prairie View, Tex.—All departments showed marked progress. Students take readily to industrial pursuits.

Agricultural College of Utah, Logan, Utah.—The new laundry, kitchen rooms, and culinary rooms of the domestic arts department, rooms for dairy department, shops for iron mechanism, forge shops, wood shops, drawing rooms, and laboratories of the new building have been found excellently adapted to their purpose. The college graduated its first class of 15 members this year. The commercial course has been extended to four years.

University of Vermont and State Agricultural College, Burlington, Vt.—Two new buildings are being erected, and will cost, with equipments, \$250,000. The number of students in the industrial departments is increasing, both actually and relatively. A valuable tract of land, 18 acres, has been purchased.

Virginia Agricultural and Mechanical College, Blacksburg, Va.—The faculty has been increased by the addition of three assistants—1 in mechanical engineering, 1 in English, and 1 in mathematics. New buildings erected were a creamery and cheese factory, cottage for horticultural foreman, and a dormitory containing 55 rooms. Large and important additions were made to the equipment of the departments of electrical and mechanical engineering; new lathes, benches, and machines were put in the wood shop; foundry put in running order; steam laundry put in operation, and large additions made to the apparatus in the different scientific departments. Two new pieces of artillery were purchased; 20 cows were added to the dairy herd, and pigs of

improved breed were obtained. The degrees conferred were as follows: 9 B. S.; 1 A. M.; 1 M. E.; 1 C. E.

Washington Agricultural College and School of Science, Pullman, Wash.—A short course in agriculture is offered for the benefit of those who come from the farm and go back soon to the farm. The course in domestic economy was well attended by young women. The course in agriculture was attended by 25 young men.

West Virginia University, Morgantown, W. Va.—The number of students has been greater than in any other year in the history of the university. The full agricultural course has been extended to four years. Special effort is being made to develop the department of mechanical and electrical engineering and mechanic arts. Extensive additions have been made to the equipment and the capacity of the buildings will be doubled. About \$10,000 were expended on buildings for the experiment station.

University of Wisconsin, Madison, Wis.—During the year the horticultural building has been erected at a cost of \$23,167, \$14,200 of which sum was by direct appropriation from the legislature of 1893 for that purpose. The same legislature appropriated \$800 for tobacco investigations. One hundred and three students took the dairy course; we could have had twice this number had there been accommodations. The legislature of 1893 appropriated \$25,000 for an addition to the present mechanical building, and these improvements are now well under way.

University of Wyoming, Laramie, Wyo.—The equipment of the various laboratories has been improved, and the facilities for instruction are much better than heretofore. Wyoming is not an agricultural State and our students are not disposed to pursue a strictly agricultural course; but the mechanical engineering course is quite popular with the students, many, in scientific courses of the university, availing themselves of the opportunity offered in manual training afforded by the workshop of the mechanical department.

THE TEACHING OF AGRICULTURE.

[The following address was delivered by the Commissioner of Education at the annual meeting of the Association of American Agricultural Colleges and Experiment Stations, held at Washington, D. C., in 1894.]

I thank you, Mr. President, for your kind allusions to me personally. In the few remarks which I have to make I propose to call attention to the twofold relation which the agricultural college bears, namely, on the one hand, to the Department of Agriculture, and on the other hand, to the Bureau of Education. The Department of Agriculture assists it by making wise and useful experiments in regard to plants and animals, the selection of the best methods of training and cultivating, the modes of adaptation to climate and soil. We, in other Departments of the Government here in Washington, are proud of what the Agricultural Department does in these and in other lines; but my Bureau wishes to be kept in mind by the managers of agricultural colleges for its interest in methods of teaching and school management. I shall speak at length of the method of teaching agriculture as a branch of study. The agricultural population in any country is the most conservative class of all its people. They follow the methods of their predecessor; they are patriarchal in their ways. You have dealt with them and do not need assurances from me. You could read us a lesson on this subject; but I was born on a farm and had the education of a farmer and know something about the prejudices and conceits that he harbors. The farmer believes his vocation to be the one which secures the most personal independence of all employments, because he raises what he eats and often the raw material for clothing. He thinks of an ideal civilization in some far distant future which shall have no cities, but only farms. I could make a long story of the development of my own ideas in this regard. I could tell how I changed my former ideas and came to see that farming is the most dependent of the employments, and that instead of farm life, urban life is the life of the future and of the highest civilization. Farming will in that period become market gardening and be as

profitable as manufacturing and commerce are. I began by supposing that the farmer produced most of the wealth of the country, but when I investigated the questions of political economy I learned that it is the manufacturer and commercial vocations which add most to the value of our productions.

The raw material furnished by the farmer constitutes one-fourth or one-fifth of the wealth of the country, and the three-fourths or four-fifths which includes the other wealth of the country is furnished by the manufacturer and trader and the one who transports the goods. Looking into the problem of the education of the farmer one meets first these curious facts: He finds the farmer the most conservative person and the person who is the most ignorant of the true basis of modern civilization, which rests on productive industry and the application of machinery to the performance of the drudgery of the world. All this points directly to the significance of the agricultural and mechanical college. It shows its great power and usefulness. The agricultural college takes a boy from this place and another from that place, educates him, teaches him what his gifted fellow-men have been doing in the way of inventing new methods of creating wealth, increasing the production of farms, aiding human labor by machinery. It sends him back to his community charged with information and with a spirit of inquiry. The college may profitably set its students to reporting upon the condition of their local communities, discussing the methods in vogue, and especially making note of the enterprising citizens of their localities. This suggests what we call "university extension," now creating so much interest in this country and England. University extension seems to be the very field of greatest usefulness open to the agricultural college. I defer to your better wisdom in this matter. It seems to me that such extension of higher education and of secondary education promises to enable us to take account of two kinds of youth in the community. One kind of youth we have provided for. He is the boy who wants the old-fashioned education and his parents can afford to pay for it.

We make him pass strict examinations in the elementary work, and promote him step after step when he has completed the course prescribed. Hitherto we have included the other kind of boy—the boy who has great talent in some particular direction, but has not a taste for the old-fashioned education, and will not pass through a course of study extended through many years. The secondary school and the college lose their hold of this class of youth; but a great many of our successful men come from this class. Perhaps they would have taken a regular course of education in the schools if their parents had furnished the money for it. A great many of our millionaires are not college bred; many of our inventors are not college bred; they have, nevertheless, become giants in their special provinces. They have been gifted in special powers. It would be interesting could we trace in every case the history of these men back through their infancy and study their heredity also. We should see how the brain, nerves, and energy of the family worked to develop a man who has a faculty of secreting wealth, as the adipose tissue is secreted in the body. It is a matter of congratulation that the agricultural college is about to take hold of this work and look after the sporadic individual who is good in some particular line but has no activity for general studies, or at least no taste for them. His whole soul goes out in activity on some particular line. It may be entomology, or astronomy, or meteorology, or botany, or archæology; or it may be a much narrower province, such as the cultivation of the potato, the improvement of the beet root for the table, or for sugar-making purposes. We shall agree that the schools ought to get hold of such men. I believe it is one of the important functions of the agricultural college to look out for the youth who do not come to school, but who show eminent capacity in particular lines relating to the industries, or especially agriculture. My neighbor, Mr. Bull, in Concord, Mass., invented the Concord grape by a long series of experiments on the native grapes of his region.

I do not mention this function of the agricultural college as seeming to offer advice to you who are present, for I well know that you are the most competent men in the

United States to understand the work of the agricultural colleges, and I believe that you have found out or are in the process of finding out the lines in which to best direct their work. This annual conference of agricultural college presidents is itself sufficient evidence that what each discovers in the course of the year is brought to the attention of all his fellows. There is a constant process of reinforcing each agricultural college by the experience of all similar institutions.

While I as an outsider am not competent to suggest new lines of work, I claim to know enough about the subject to arouse in me the desire to get brief reports on the progress made by the faculties of your institutions in reducing agriculture and kindred branches of industry to a pedagogical form. The branches of instruction in the old colleges have long since been reduced to such a form. The studies of Latin and Greek, mathematics, history, geography, grammar have been so arranged that the lesson that lies nearest to the pupil's mind is placed at the beginning. It is followed by a second lesson which presupposes the first lesson and builds upon it, a third lesson, a fourth lesson, and all the rest follow; each one building on what has gone before it and adding some new matter of consideration that is important and useful. It is essential to the pedagogical form that the first lesson shall be useful and good if no other lesson follows it. It is essential that if you cut off the series of lessons at any point that all shall be useful and valuable up to that point. It is bad pedagogical form to oblige the pupil to learn a series of lessons which are nothing in themselves but the mere scaffolding to an important idea by and by to be developed.

In your branches of mechanical industry you find that much has been done to reduce these to a pedagogical form. In the public schools of many cities, especially in Massachusetts, cooking is taught in a series of progressive lessons. Its pedagogical form has been fully developed. I take it that in the study of agriculture whatever branches are taught as preliminary discipline should have practical illustrations drawn from the soils, plants, and animals at every step. As in all other branches, we must get hold of the interest of a pupil, both hereditary and acquired, and fasten one by one our studies to this interest. I desire to get from each agricultural college brief reports of progress made in reducing the various features of this field of study to a pedagogical form, being confident that when this reduction is complete, instruction in agriculture will not only be well managed in your institutions, but also will find its way into the elementary schools of the farming districts.

I read some time ago in Thorold Rodgers, in his book entitled "Six Hundred Years of Wages," Chapter XVI, the following:

"We owe the improvements in English agriculture to Holland. From this country we borrowed, at the beginning of the seventeenth century, the cultivation of *winter roots*, and at that of the eighteenth century the *artificial grasses*. The Dutch had practiced agriculture with the patient and minute industry of *market gardeners*. They had tried successfully to cultivate everything to the uttermost which could be used for human food or could give innocent gratification to a refined taste. They taught agriculture and they taught gardening. They were the first people to surround their homesteads with *flower beds*, with *groves*, with trim *parterres*, with the *finest* turf, to improve *fruit trees*, to seek out and perfect *edible roots* and *herbs*, at once for man and cattle. We owe to the Dutch that *scurvy* and *leprosy* have been banished from England; that continuous crops have taken the place of barren fallows; that the true *rotation of crops* has been discovered and perfected; that the population of these islands has been increased, and that the *cattle* and *sheep* in England are *ten times* what they were in numbers and *three times* what they were in size and quality. Even now the ancient agricultural skill of the Hollander is not extinct. The gardeners of Haarlem still purvey *roots* and *bulbs* of flowers for the civilized world, and there is much which the English agriculturist of the present day could learn with advantage from the industry, patience, and skill of the Dutch farmer, and perhaps will learn, when England is relieved from the curse of her present land system and her tenant farmers till the land under the same guarantees as the Dutchman does."

It would seem from this quotation that England changed her agriculture from the old-fashioned style of raising staple crops to the more lucrative and highly developed farming known by us as "market gardening." I think that it is one of the most important subjects connected with the study of agriculture—this matter of market gardening. I can see that it is very important to detail intelligent students or committees of students from each class to study the methods of the market gardeners who live in the suburbs of the nearest large cities. The States remote from cities show a much less profitable farming than those States whose farmers reside in the neighborhood of the great cities. Some years ago I found that the farmers of Maine averaged about \$300 a family, counting their total productions at market prices; while the farmers of Connecticut averaged only a little less than \$600 a year, because of their nearness to New York and its densely populated suburbs. What an interesting seminarium or college conference could be held with a class of agricultural students who discussed in a round-table style the report of a committee of their classmates who had been inquiring into the market gardens and ascertaining what crops are raised and in what order of succession; how many in the year; how the gardeners meet the first demands of the market in the spring; how they use forcing houses; how they handle transportation; how they get to market; how they live—that is to say, how they sleep and eat while on the way to the city and while there. All these little practical items become interesting and suggestive when discussed in this way. The uneducated person lives and acts, but does not think about the method of his living and acting. School education sets the individual at once to considering the method in which things are done. What an interesting thing it would be to compare the methods of market gardeners in New Orleans, Cincinnati, Boston, New York, Chicago, St. Louis, Baltimore, etc. Set to study these processes, the students of the agricultural college become centers of information and directive power for their neighborhoods when they return as graduates to their homes.

It has been found that university extension stands in need of endowment much more than the regular teaching work of the colleges of the country. There should be fellowships founded by wealthy men interested in agriculture, so that young men of genius may repair to the college on these fellowships and have their necessary expenses all provided for. This is the one country of the world for endowment of educational institutions by private munificence. I presume that each college president knows of certain persons who would be glad to erect monuments for their families in the shape of scholarships in the State university, if they were sure that the money would increase the practical acumen of students who seek higher education. I believe that in this direction large endowments may be expected in the near future, and that a proper account of the practical work done by agricultural students when published in the Annual Report of the Commissioner of Education will be found the best means of attracting from men of wealth numerous endowments for the purpose of founding fellowships in agriculture. Many of the wealthy men of this country look askance at the liberal education furnished in our colleges and universities. Many have devoted large sums to establish nondescript institutes, with the hope that they would better fit young men for industry and the practical demands of life. They want something, but they do not know how to obtain what they want. I believe that it is in the future of these land-grant colleges, founded for agricultural and mechanical instruction, to solve this problem and to hold up for the would-be practical philanthropists a kind of education which makes the most of the talents of the youth and to stimulate him to original investigation and to lead him onward into the necessary abstruse and highly technical studies which are necessary in order to endow him with power to solve the highest problems. I have ventured to make these remarks in order to show more clearly what kind of contributions I should like from the presidents and professors of agricultural colleges who will kindly undertake to record for me these items of progress in the development of the pedagogical form for the new branches of instruction.

CHAPTER II.

FORESTRY EDUCATION.

By C. WELLMAN PARKS, C. E., *Special Agent of the Bureau of Education to the Antwerp Exposition.*

Probably no other great subject is receiving so little attention in the United States as the science of forestry. Its importance is not generally appreciated and doubtless most people look upon it as a subject of secondary importance to all but farmers and lumbermen. Americans, who are so apt to invent mechanical appliances to effect economies in manufacturing, should excel in the treatment of the greater questions of political and social economy. So long as the forest is considered only as a source of timber and wood and continues to supply these commodities in such quantity that the market prices are not materially increased, it may be difficult to impress the people with the idea that forestry is a question which demands immediate consideration. But there is no nation of Europe which has not learned that forest science is a subject of national importance, and we can not hope to ignore it for many more generations.

Nearly every European nation owns extensive forests, which are so well managed by State forest directors that they are the source of considerable public revenues. Among the largest and best managed of the national forests are the Prussian forests, of 6,200,000 acres; the French forests, of 2,200,000 acres; the Bavarian forests, of 2,300,000 acres, and the Austrian forests, of 2,330,000 acres. The following table shows the area, approximate annual cost, and approximate annual income from each of the above forests:

Nation.	Area.	Approximate annual cost.	Approximate annual income.	
			Gross.	Net.
	<i>Acres.</i>			
Prussia	6,200,000	\$8,000,000	\$14,000,000	\$6,000,000
France	2,200,000	2,500,000	7,500,000	5,000,000
Bavaria	2,300,000	3,000,000	6,000,000	3,000,000
Austria	2,330,000	1,500,000	2,000,000	500,000

Of the 70,000,000 acres of forest land owned by the United States about 17,000,000 acres have been reserved for permanent forests. Besides the forest land owned by the United States, there are about 400,000,000 acres of forest land owned by individuals.

At present we are using, annually, 500,000,000 cubic feet of wood for railroads, another 500,000,000 cubic feet for fencing, 4,000,000,000 cubic feet for lumber, and about 17,000,000,000 cubic feet for all other purposes. If forests were properly managed, the annual growth of 300,000,000 acres would produce this amount of wood. Under present conditions it is probable that not over a third of the consumption is supplied by annual growth, the balance being taken from the original store of the forests; that is, we are not only using the interest but are impairing the nation's

capital. If this means deforesting one or two million acres per year, the nation may, from the point of view of timber and wood supply, continue for another century to ignore the subject.

It must be remembered, however, that much of the forest land is so far removed from the populous parts of the country that its wood is practically unavailable on account of the cost of transportation; so it is desirable to reduce the consumption of forest produce by substituting other materials where practicable, and by taking such precautions as will increase the life of timber. This is specially true as regards railroad ties, for the tie maker generally wastes more wood than he uses. Often he destroys a fine, large oak to make a single tie, which he sells for less than 50 cents.

But of much greater importance than its value as a source of timber and wood is the influence of a forest upon agriculture, trade, and transportation.

No agricultural crop can be a success without a proper mixture of sun and water, and over much of the country the farmers have reason to fear drought until their crops are either ruined or harvested. Their experience has been such that they do not expect a full crop oftener than once in three or four years. If they could be assured that their crops would be frequently watered they would feel that time expended in planting is not wasted time. Anything, which is not too expensive, that can insure a proper supply of water should be made use of; and it is believed that a forest, more than any other thing, can do this. If so, our high lands should be covered with forests. An assured and properly used water supply would increase the income from farm lands by at least \$5 per acre, which would warrant the expenditure of from \$50 to \$100 per acre to provide such a supply. At the prices for which forest land is being sold in New England this would represent from 10 to 30 acres of mountain forest. Of the total areas of valleys the best tenth might be divided into farms to be worked by their owners and the other nine-tenths kept in forest. The increased taxable value of the farms would be sufficient reason for the State to own and preserve the forest, for the interest on the investment would be more than met by the increased taxes on the improvements, even if the forest itself yielded no direct income.

Turning from agriculture to manufacturing, we find that nearly all manufacturers are using steam engines, and that the natural energy of the streams is wasted, because water power can not be relied upon, the streams getting beyond control after thaws and storms, and at some other times becoming almost dry. The floods are liable to do great damage to buildings and goods, and the dry stages require either a suspension of operation or supplementary power.

This condition, which has come about with the cutting of the forests and the settlement of lands upstream, causes us to consider whether the farms are worth as much as the forests and uniform water power which they have caused to disappear. In the case of steam power, man mines and transports coal at great expense, and in converting it into mechanical energy is forced by nature to waste five-sixths of the inherent energy. In the case of water power, nature transports the fuel and allows man to use five-sixths of the inherent energy. For the protection of our coal supply, wasteful steam engines should, wherever practicable, be displaced by water motors or by electric motors driven by electricity generated by water power and transmitted to the distant points where it is needed. The Government should, by restoring the forests, improve the flow of streams, and thus encourage the substitution of economical water wheels for wasteful steam engines.

Turning from manufacturing to transportation, the Erie Canal and Hudson River will be mentioned as examples of water highways that have been injured by the destruction of the forests. For many years the Mohawk River furnished sufficient water to operate the eastern end of the Erie Canal, but when much land had been improved the floods and droughts came and made it necessary to find an additional supply of water, so the Black River was tapped. These same floods and droughts changed the flow in the Hudson to such an extent that adjacent lands and buildings were damaged by the floods, and navigation was impeded by the droughts and the

silt deposited by the receding floods. Millions of dollars are being expended to remedy these evils, not by removing the source of the evils but by removing the effects.

Fortunately natural forest land is held to be of so little value that States can acquire it without great expense, and if forests are so important to the farmer, manufacturer, and transporter, it would seem that the Government should own and manage the forests for the benefit of all citizens of the State. Another reason for State ownership of forests is that a State can wait a century for the crop which is so slow growing that it can not return an early crop to the planter.

Forestry, then, should receive attention, because a properly managed forest will furnish a continuous supply of useful forest products; because it will furnish uniform power to manufacturers, and because it will regulate the flow of water and silt in navigable and irrigating streams, thus insuring good crops and cheap transportation.

The proper management of forests requires a considerable number of highly educated forest engineers, and every European nation has at least one state school in which to educate such men. France has its school at Nancy; Italy has its school at Vallambrosa; Spain has its school in the Escorial, and nearly every other nation has a school at or near the capital of the country. Among the important forest schools in Germany are the Prussian schools at Neustadt, Eberswald, and Münden; the Saxon school at Tharandt, the Badenese school at Karlsruhe, and the Bavarian schools at Aschaffenburg and Munich. Until recently England had no forest school, but, recognizing the importance of having trained forest engineers, sent state pupils to the schools at Nancy, Karlsruhe, and Zurich to be trained for service in the forest departments of India, South Africa, and other colonies.

One can not doubt that such a school is needed in this country, for, to avoid robbing future generations, the present generation must keep the country in as good natural condition as it is to-day; and this can not be done without specially trained men to direct the use and stop the abuse of natural resources. This generation is robbing future generations by wasting coal, oil, gas, and wood. The National and State governments should combine to stop this abuse, and, while thus protecting the interests of the citizens, they may draw from the forests and streams a considerable income which should reduce the tax rates on property owned by individuals. Three hundred million acres of forest, managed as state forests are managed in France and Germany, would require perhaps 30,000 trained men and, providing the market prices were alike in Germany and the United States, would yield a net income of over \$250,000,000. As the market prices are not now the same in both countries no such profits could be expected, but the rapid increase of population in this country may be depended upon to soon make the conditions here what they now are in Germany.

The following brief description of typical European schools will give some idea of their plans, methods, and equipment, and may be of value in deciding upon the form of school best suited to the conditions which prevail in this country.

The French National Forestry School, established at Nancy in 1824, has from the beginning been devoted exclusively to the education of forest engineers; and, while maintained especially for the education of candidates for the French forest service, it has been open to other French students who disclaimed any intention of ever becoming candidates for positions in the state forest service. Of both classes of French students the average number in attendance has been about 40. At the request of the Belgian and British governments, state pupils from those nations have also been allowed to study at the school.

Until 1888 the first part of the course was devoted to the study of mathematics and fundamental sciences preparatory to the advanced professional work of the latter part of the course. At that time, it having been decided that some of the preliminary work could as well be done elsewhere, and that the faculty at Nancy, if relieved of this work, could give better attention to the professional part of the course, the

President of France decreed that henceforth all state pupils of the National Forestry School at Nancy should be chosen from the graduates of the National Agronomic Institute of France, an institution revived in 1876, and established in the Conservatoire des Arts et Métiers at Paris.

In the latter institution there is a three-years' course of instruction given by a teaching staff of about 50 professors and others. Of those graduates who wish to enter the national forestry service, the 10 or 12 who stand highest in the classes are given purses of 1,500 francs and appointments to the National Forestry School at Nancy.

Since this arrangement went into effect the course of instruction at Nancy has been shortened to two years, of which time thirteen months are given to theory and seven months to practice. The subjects taught by the 7 professors may be classed under four heads. (1) Natural science applied to forestry (forest meteorology, forest life and growth, forest estimates, etc.); (2) legal science applied to forestry (civil and criminal laws, game laws, forest laws, etc.); (3) administrative science applied to methods and plans for working forests; (4) mathematical science applied to topography, surveying, mapping, hydraulics, and the construction of roads, buildings, bridges, mills, and dams.

A forest experiment station, of very great value to the school, is conducted by the director in a forest of about 6,500 acres set apart for this purpose. Here the student of forest science has a chance to become familiar with the practical management of the forest and forest nursery, the taking of meteorological observations, and the methods of forest research.

The United States Government having already set apart over 17,000,000 acres of land, to be kept in forest, should be interested in the education of men to manage this immense property. It is a question whether this interest should be shown by encouraging the States to properly educate candidates for this service or by providing a national school for forest officers, similar to those already established for army and naval officers. If a national school were to be established, it might well be modeled to some extent after the school at Nancy, but it should be located in Washington, and the chief of the Forestry Division of the Department of Agriculture should be its nominal director. A deputy might represent him in minor details of management. The Commissioner of Lands should be president of the regents. The students should be drawn from the agricultural and scientific schools of the country, and should be kept in the national school for one or two years. Special attention should be paid to social and political economy as well as to the subjects relating to the technical working of forests.

While the school at Nancy might be a good example to follow in planning a national school, it would not seem to be as good a model for an economical state school as one of the arrangements given below.

The class of institution represented by the schools of Baden and Switzerland is better adapted to the requirements of States which may find it desirable to educate forest officers. The forest school of Baden is a school in the Polytechnicum at Karlsruhe, and the forest instruction in Switzerland is given in one of the three departments of the forest and agricultural school of the Polytechnic.

At Karlsruhe, the Polytechnicum was established in 1832, and two years later the school of forestry was opened. Being one small school (35 students) of a large institution (775 students) the school of forestry is much more economically officered and managed than it would be if it were conducted as an independent institution. The special teaching force required consists of 2 professors and 2 assistants, all work not done by these men being done by other teachers of the Polytechnicum in connection with similar work for other schools. Of the hundred hours' instruction per week given in winter to the four forestry classes, the special teachers give forty-four hours, and they give forty-four hours out of the total of seventy-five hours given in summer to the three classes.

It will be noticed that the course consists of four winter and three summer terms

the winter terms lasting from October 1 to March 15, and the summer terms from April 15 to July 31.

Besides the other numerous collections belonging to the Polytechnicum, there are two special collections for the forestry students, an arboretum, and a collection of objects of importance in forest work.

The course of instruction, based upon history, science, and art, and given by lectures, examinations, and laboratory work, is offered to citizens of Baden who have completed a full course at a gymnasium and wish to enter the State-forest service. For two years the studies do not relate directly to forestry, but are fundamental, and prepare the students for the forestry studies, which are given in the last two years.

At the end of the second year examinations in natural philosophy and mathematics are held by the professors of the Polytechnicum, and these examinations are open not only to the students who have attended the two lower classes at the Polytechnicum but also to foreigners who have not attended these classes. Candidates who pass these examinations are then admitted to the work of the upper classes. At the end of the course final examinations are held by a board consisting of the forest directors, a lawyer, and professors of agriculture, mathematics, and forest management. Successful candidates then become assistants to district-forest directors and are in line for promotion whenever vacancies occur.

The course of study for 1894-95 is as follows:

STUDENTS OF THE FIRST YEAR.

WINTER SESSION.

Plane and solid geometry, 2 hours per week; analytical geometry, 3 hours; plane and solid trigonometry, 2 hours; general botany, 4 hours; general zoology and vertebrates, 4 hours; experimental physics, 4 hours; inorganic experimental chemistry, 4 hours; general forestry, 2 hours; plan and map drawing, 2 hours; free-hand drawing, 2 hours; fish, fisheries, and fishing, 2 hours; and forest excursions.

SUMMER SESSION.

General arithmetic, 2 hours per week; systematic botany, 4 hours; plant determination, 1 hour; zoology invertebrates, 3 hours; forest entomology, 3 hours; biology, 2 hours; experimental physics, 4 hours; organic experimental chemistry, 4 hours; plan and map drawing, 2 hours; botanical excursions.

STUDENTS OF THE SECOND YEAR.

WINTER SESSION.

Review of elementary mathematics, 6 hours per week; practical geometry, 3 hours; projections, 3 hours; elementary mechanics, 2 hours; meteorology, 1 hour; mineralogy, 4 hours; microscopy, 2 hours; plant diseases, 1 hour; plan and map drawing, 2 hours; fish, fisheries, and fishing, 2 hours; chemical laboratory, spare hours.

SUMMER SESSION.

Review of elementary mathematics, 4 hours per week; projection drawing, 2 hours; plan and map drawing, 2 hours; forest botany, 2 hours; microscopy, 2 hours; fungi, 1 hour; geology, 4 hours; forest entomology, 3 hours; forest statistics, 2 hours; soils, 2 hours; hunting, 2 hours; surveying, 2 afternoons per week; chemical laboratory, spare hours.

STUDENTS OF THE THIRD YEAR.

WINTER SESSION.

Fish, fisheries, and fishing, 2 hours per week; forest culture, 5 hours; wood measurement, 2 hours; forest roads and hydraulics, 3 hours; forest management, 3 hours; rural economy, 2 hours; domestic economy, 4 hours; civil law, 3 hours; forest excursions, Saturdays.

SUMMER SESSION.

Forest working, 4 hours per week; forest protection, 2 hours; forest valuation, 4 hours; rural economy, 2 hours; finance, 3 hours; domestic economy, 1 hour; trade and commercial policy, 2 hours; forest and game laws, 3 hours; forest excursions, Saturdays.

STUDENTS OF THE FOURTH YEAR.

WINTER SESSION.

Fish, fisheries, and fishing, 2 hours per week; forest history, 2 hours; forest management, 2 hours; forest revenue, 2 hours; rural economy, 2 hours; sociology, 2 hours; civil law, 3 hours; criminal law, 1 hour; irrigation, 2 hours; forest excursions.

Students in the forestry school are advised to attend some of the following classes:

WINTER SESSION.

Histology, 2 hours per week; growth and development of man and the higher animals according to the theory of descent, 1 hour; criminal law, 1 hour; history of civil wars before 1850, 2 hours; Shakespeare's works, 2 hours; Goldsmith's works, 2 hours; French language and literature, 2 hours; theory of photography, 2 hours; practical photography, 2 hours; engraving on copper, 1 afternoon; photographic excursions.

SUMMER SESSION.

Review of zoology for forest students, 1 hour per week; history of civil wars since 1850, 2 hours; Lessings's works, 2 hours; principles of style and ornament, 2 hours; French language and literature, 2 hours; practical photography, 14 hours; photographic optics and chemistry, 2 hours; engraving on copper, 1 afternoon.

In Zurich, as mentioned above, forestry instruction is given in the Agricultural and Forestry School of the United Polytechnics. For some years a similar arrangement existed at Karlsruhe, but of late years the agricultural part has not been in operation. In Karlsruhe there is a three and a half years' course, and in Zurich a three years' course. In Karlsruhe there are 2 special professors; in Zurich there are 3. Twenty professors belonging to other of the Zurich polytechnic schools also give instruction to forestry students. At Karlsruhe the forestry school has no special building; at Zurich the agricultural and forestry school has a special four-story building 115 feet long and 57 feet wide. The high basement is here counted as one story. This building contains laboratories, museums, lecture rooms, and studies for the professors and assistants. The north end of the second floor is used for an agricultural chemical laboratory large enough to accommodate about 20 students. Connected with this laboratory are furnace and balance rooms, a reference library, and a collection of chemical preparations. The Plant Physiological Institute for the study of general botany (morphology, anatomy, physiology, pathology, and cryptogamic art) is provided on the upper floor with auditorium, physiological laboratory, museum, apparatus room, and a microscopical laboratory furnished with 25 microscopes and about 2,500 slides.

The forest school museum is arranged in two parts, part one being of natural science and part two of forest science. Part one, devoted to the science of soils and plant growth, contains an herbarium, a collection of woods, saps, resins, barks, nuts, and other products; a collection of useful and injurious mammals, birds, and insects, and a series of sections of the same tree cut at different heights. Part two, devoted to forest exploitation, instruction, statistics, and hydraulics, contains a collection of tools, models of coal and tar kilns, contrivances for transportation of wood, forest maps and charts, models and sections to illustrate drainage methods, models of game, and a rich forest literature.

Besides the museums and laboratories already mentioned there is an arboretum and also an experiment station in the Zurich forest.

Instruction in the following subjects is given to forestry students:

WINTER SESSION.

General forestry, forest policy, forest protection, forest guards, forest climate, forest culture, forest products, general law, political economy, general botany, pathology of plants, general geology, mathematics, topography, and map and plan drawing.

SUMMER SESSION.

Forest history, forest laws, forest growth, forest valuation, forest practice and technology, forest roads and hydraulics, forest botany, plant physiology, microscopy, varieties of wood, petrography, soils, organic and agricultural chemistry, meteorology, experimental physics, mathematics, topography, map and plan drawing, and general law.

At the beginning of the third year examinations are held in mathematics, physics, chemistry, agricultural chemistry, general and special botany, zoology, general geology, climatology, meteorology, and political economy. At the end of the course oral examinations are held in forest policy, forest management, forest protection, forest growth, forest valuation, forest revenues, wood measurement, surveying, earth constructions, hydraulics, and general law.

Candidates for graduation are required to prepare a thesis and a set of working plans.

If it were decided that American forest officers should be educated in schools modeled after those of Zurich and Karlsruhe, our land-grant colleges would furnish the opportunity; for, while they are now devoted almost exclusively to the study of agriculture and the mechanic arts, they could easily be sufficiently expanded to provide for the proper education of forest engineers. In most cases it would be necessary to add professorships of law, political economy, and forestry, and it would probably be desirable to add a post-graduate year to the present course.

But a third class of institution, represented by the Bavarian system, is probably much better than anything described above, and could be quite easily provided in most of the States. This system makes forestry a university study, and, by requiring forestry students to live and study at a university, secures for forest officers a body of broad-minded men who are well able to deal with matters of public policy.

In 1807, seven years before the principality of Aschaffenburg became a part of the Kingdom of Bavaria, a private forest institute was opened in Aschaffenburg, and the prince primate, who took a great interest in the school, desired to make it a public institution; but for various reasons was only able to grant it a part of the Spessart forest for its home and support. After the consolidation a rescript, dated September 22, 1815, continued the institute in possession of its property and privileges, although it was thought that the institute could not do all that should be required of a forest institute. At that time there were seven teachers, of whom the director was forest master of the Spessart; three other teachers were professors in other schools, and another was a physician.

The Bavarian general forest administration, after considering the means available for the education of forest officials, determined that while a forest academy might be of advantage in training men for the subordinate positions in the forest service, the university must be depended upon to prepare men for the higher positions.

By the consolidation Aschaffenburg had lost its importance as a seat of government. In consideration of this, and also on account of the forest institute already established, it was decided in 1819 to establish a national forest academy in Aschaffenburg, although a central location would have been more convenient for the people. This academy was not satisfactory, so was closed in 1832, but was again opened in 1843 because a school was much needed and no other place considered seemed to offer better facilities.

It is the function of this academy to prepare young men, who wish to enter the Bavarian forest service, in the fundamental and accessory sciences so far as may be

necessary to qualify them for pursuing an exhaustive study of forest science in a university and in the forest experimental institute in Munich. All candidates for the Bavarian State forest service must and other students may take the two-year course at the academy.

Instruction is given by a director, a forest director, and professors of mathematics, physics, botany, zoology, chemistry, and drawing; and the subjects taught are algebra, geometry, trigonometry, analytical geometry, calculus, inorganic and organic chemistry, physics, botany, zoology, mineralogy, mensuration, surveying, map drawing, elements of sylvaculture, forest guards, road making, and hunting.

After finishing the course at Aschaffenburg, forest-service candidates must continue their studies for at least two years at a German university and must attend at least one year at the practical exercises in the forest experiment station at Munich. This last work may be done during the second year of attendance at the university. At the university in Munich students are instructed in political economy, jurisprudence, and professional forestry. The six forestry professors are members of the faculty of political economy.

The following subjects are taught at the university:

WINTER SESSION.

Sylvaculture and forest conservation, 5 hours per week; soils, 4 hours; natural laws regulating agriculture and sylvaculture with work in forest chemistry laboratory, 3 hours; measurement of wood, 4 hours; forest surveying, 3 hours; forest statistics, 4 hours; microscopic study of plants, 4 hours; microscopy, 3 hours; State forests, 5 hours; forest history, 3 hours.

SUMMER SESSION.

Forest exploitation and forest technology, 5 hours; conservation of woods and forests, 1 hour; climatology and meteorology, 4 hours; chemistry of plants, 3 hours; rentability and income of forests, 2 hours; forest culture, 3 hours; vegetable pathology, 3 hours; forest administration, 5 hours; road making, 2 hours; land surveying, 3 hours, and forest policy, 2 hours.

Final examinations are held in Munich every year and are open to any student at the university whether he intends to enter the forest service or not.

If this class of institution shall become the model to be followed in establishing American forestry schools, there are already a half dozen or more good universities in which such schools can be established. It is not desirable to have too many institutions undertake this work, but there is room for ten if they be properly distributed.

The admirable report of the New York forest commission for 1893 gives detailed information relating to the Adirondack and Catskill forests, from which it would appear that the demand in that State for trained forest directors will soon be felt and will have to be met.

There are in the Adirondack forest about 3,500,000 acres, of which the State owns about 750,000 acres and 45 clubs and individuals own about 950,000 acres. In the Catskills there are about 2,000,000 acres, of which the State owns about 50,000 acres.

Probably a single school would provide for the mountain region of New England and New York, and this region should require about 30 graduates per year.

Other schools should be provided for the Atlantic, Gulf, and Pacific coast regions, the Alleghany and Rocky Mountain regions, and the upper and lower plains of the Mississippi Valley.

[In connection with the preceding article on forestry education by Professor Parks it may be well to state that while there are no special schools of forestry in the United States, some instruction in forestry is given in a number of the colleges of agriculture and the mechanic arts endowed by the acts of Congress of July 2, 1862, and August 30, 1890.]

The instruction in this subject is not very extended, covering, in nearly all cases, but one term of the college year. It is carried on mainly by lectures and such textbooks as Hough's *Elements of Forestry* and Fuller's *Practical Forestry*, the lectures and instruction being given by either the professor of horticulture or the professor of botany. There is not, so far as known by this Bureau, a separate and distinct professorship of forestry in any institution in the United States. The subject is, however, receiving increasing attention in this country, as is evidenced by the creation of State forestry commissions.

The instruction in forestry given by the land-grant institutions, as shown by their catalogues, is as follows:

Colorado Agricultural College.—Lectures are given on the gathering and preservation of forest-tree seed, the planting of seed, and the care of seedlings; on the value of trees for timber and ornament, for hedges, screens, and shelter belts. (Fall term.)

University of Illinois.—Forest trees and their uses, their natural distribution, and their artificial production. The relations of forest and climate are studied, and the general topics of forestry legislation and economy are discussed. (Lectures, winter term; half study.)

Purdue University, Indiana.—Effects of forests upon climate; reasons for forest-tree planting; trees for various locations and methods of growing same. (Spring term.)

Iowa State Agricultural College.—Instruction in forestry is given in connection with the study of horticulture by means of lectures.

Massachusetts Agricultural College.—Many kinds of trees suitable for forest planting are grown in the nursery, and plantations have been made upon the college grounds and upon private estates in the vicinity, affording good examples of this most important subject. A large forest grove is connected with this department, where the methods of pruning trees and the management and preservation of forests can be illustrated. In the museum and lecture room are collections of native woods, showing their natural condition and peculiarities; and there have been lately added the prepared wood sections of R. B. Hough, mounted on cards for class-room illustrations.

Michigan Agricultural College.—Elements of forestry. (Autumn term.)

University of the State of Missouri.—Forestry is taught by lectures, with required readings. It includes the influence of forestry on climate, the management of forests, and the specific characteristics of the principal economic trees of America. (Second semester, three times a week.) An elective course in forestry may be arranged for seniors.

Montana College of Agriculture and the Mechanic Arts.—The consideration of the subject of forestry includes not only a study of various forest trees and their uses; but also the production and conservation of forests and forest conditions, the relations of forests and climate, and the general topics of forestry legislation and economy. Instruction will be chiefly by lectures, and the subject will be made as practical as possible.

University of Nebraska.—The elements of forestry.

University of Nevada.—General forestry is taught by means of lectures and the best literature that can be obtained. (Seniors, third term, five hours a week.)

New Hampshire College of Agriculture and the Mechanic Arts.—Lectures concerning the utility of forests, principles of silviculture; forestry laws, character and composition of woods, and the distribution of timber trees in the United States.

Cornell University, Ithaca, N. Y.—Trees and shrubs, their structure, characteristics, cultivation, and uses; forests and forest economy; elements of forestry, by lectures. Additional work by appointment. (Spring term, twice a week.)

North Dakota Agricultural College.—The instruction in forestry is chiefly confined to the influences of forests upon the climate and productiveness of a country. Under these heads the direct effect of forests upon winds, storms, frosts, rivers, floods, deserts, and marshes will be given, as well as their action in soil formation and fertility. As much time as possible is devoted to the methods of forest planting and the value of different species of forest trees. (Sophomore year, third term, four weeks, five hours per week.)

Ohio State University.—Use of trees for shelter, shade, and ornament; methods of propagation, culture, and management; history of varieties; influence of forests upon soils, crops, and climate; value of trees for timber; how to improve existing woodland; establishment and management of plantations of forest trees, etc. (First and second terms, three times a week.)

Oregon State Agricultural College.—Hough's *Elements of Forestry*. (First term.)

Pennsylvania State College.—The instruction on forestry consists of lectures in connection with Hough's *Elements of Forestry* during the spring session of the senior year. The value of forests from both climatic and economic considerations is treated of, together with the best available methods for their conservation and replacement. The college has several tracts of trees for experimental purposes.

South Dakota Agricultural College.—Forestry follows the work in botany and horticulture, extending through two terms of the junior year. The work in this department consists of lectures upon the propagation and planting of forest trees in groves and along streets; the value of shelter belts; the influence of forests upon wind and rainfall, followed by a study of the habits and characters of trees best suited to South Dakota. The lecture work is supplemented by practical work in the forest plantation upon the college grounds.

Agricultural and Mechanical College of Texas.—The management and planting of woodlands; consideration of the rôle they play in the economy of nature. Hough's *Elements of Forestry*, and *North American Sylva*, by Michaux. (Fourth year, winter term.)

Agricultural College of Utah.—Forestry will receive considerable attention. Students will have opportunity to work upon the forestry grounds of the college and to note methods of planting and care of the several kinds of trees, and to observe their habits and rapidity of growth.

Washington Agricultural College and School of Science.—The nursery already affords a large variety of trees from which the arboretum will be formed and the campus ornamented. This will afford the opportunity for the study of a large number of varieties, their habits of life, the best methods of cultivating forest trees, and making tree plantations. The attention for the present will be directed rather to the creation and preservation of young forests than to the care of old forests, though some lectures will be given upon the latter and collateral readings required.

CHAPTER III

GEOLOGY IN THE COLLEGES AND UNIVERSITIES OF THE UNITED STATES.

By T. C. HOPKINS.

The subject matter of the following notes and statistical tables on geology in the colleges has been obtained from the following sources: (1) The replies received from a circular sent out by the Bureau of Education to the different colleges; (2) the college catalogues, circulars, and announcements; (3) personal correspondence and interviews; (4) special contributions from other geologists. Prof. J. F. Kemp, Columbia College, New York; Mr. L. S. Griswold, Harvard University, Massachusetts; Mr. J. A. Bownocker, Yale University, Connecticut, and Mr. C. E. Siebenthal, Indiana University, Indiana, kindly contributed the articles on these institutions. Prof. G. D. Harris, Cornell University, contributed information from that institution.

The material is arranged alphabetically by States and by the locality of the college, except, that in the descriptive part, the colleges having strong departments of geology are generally described first, irrespective of locality.

The material was collected and arranged with three classes of people in mind, to whom the matter might be of interest and value: (1) Teachers of geology who are desirous of knowing what geological work is being done in other institutions and what facilities others have for doing the work; (2) prospective students in geology, especially graduate students, who are desirous of comparing the facilities in the different institutions; (3) the large class of educators who are interested from the standpoint of general education.

It would be interesting in this connection to have statistics on geology in the high schools, seminaries, and normal schools, but such are not available at present.

The tables and notes were made out from the original sources with considerable care, but a revision would no doubt correct many minor points, and would enable the placing of mineralogy in a separate column in the general table. A number of institutions give mineralogy part of a term or part of a year in connection with geology, so that it was not possible in some instances to determine the time devoted to each subject; but as some institutions make mineralogy entirely independent of geology it would be better to have placed it in a separate column.

A like difficulty is encountered in attempting to tabulate statistics in the comparatively modern branches of petrography and physiography which are being introduced rapidly into most of the higher grade institutions, but which in many of them, as yet, form only partial courses along with general geology or mineralogy.

Economic geology has been introduced in many institutions within the last few years. Among some of the leading institutions offering special facilities in this line might be mentioned Columbia College, Harvard University, University of Chicago, Cornell University, and Massachusetts Institute of Technology.

The figures relative to the cost of equipment and number of specimens are for the most part only approximations, but as they are furnished either by the head of the department or the president of the institution they will be close enough to give a

basis for comparison. In some of the older institutions, as Harvard and Yale, where the large and valuable collections, are the growth of many decades, no fair approximation of either the number or value could be given.

Among other points of interest shown in the tables is the wide difference in the number and strength of the departments of geology in States so closely allied in position, size, population, and wealth, as New York and Pennsylvania, or Illinois and Indiana. Thus Pennsylvania having geology in 24 colleges has a separate department of geology in only 1, and that the Philadelphia high school; while New York with geology in 22 institutions has separate departments in 9, a number of them being quite strong departments.

While there are 7 ladies teaching geology in the colleges with two exceptions they are in small colleges, where only elementary text-book instruction is attempted. The two exceptions are Miss Sarah Y. De Normandio, at Wellesley College, and Miss Florence Bascom, recently Ph. D. in geology from Johns Hopkins, now (1894) at the Ohio State University, but recently elected to Bryn Mawr College.

It will be noticed that instruction in geology, while combined in different places with a great many different subjects, is more frequently combined with the biologic sciences than any other, although combinations with chemistry or mathematics are not infrequent. In a large number of the small colleges instruction in all the natural sciences, including geology, is given by one instructor.

ALABAMA.

In Alabama geology is taught in 6 different institutions, but in only 1, the State University, is it a separate department.

The University of Alabama.—Geology was taught at this university in 1831, the year the university was founded, by J. F. Wallis, who was succeeded in 1834 by F. T. Bramby. At present it is taught by Eugene A. Smith, who is also State geologist.

The specimens collected by the State geological survey are available for instruction, so that the department is not lacking in illustrative material. The number of mineral specimens is estimated at 2,000, and rocks and fossils at 20,000, valued at \$10,000. Professor Smith's private library is available for reference.

A four years' course is given, comprising (1) physical geography, (2) mineralogy, and crystallography, (3) general geology, (4) economic geology and special geology of Alabama. The full course of four years is required of students in mining engineering. Three years are required of scientific and civil engineering students, with the privilege of electing the fourth year. In the classical course one year in general geology is required.

At the *Alabama Polytechnic Institute, Auburn, Ala.*, geology was first taught in 1859 by Prof. John Darby. The present instructor is P. H. Mell, professor of geology and botany. Geology is taught for one year and mineralogy for part of a year. Post-graduate instruction is also given in geology. In 1893-94 there were 43 students in geology, 1 being a graduate student, and 2 in mineralogy. Special attention is given to the geology of Alabama, and economic geology is taught to some extent. Geology is required of all students in the senior year.

ARIZONA.

Arizona has at present but 1 institution in which geology is taught, the *University of Arizona at Tucson*, founded in 1891. Theodore B. Comstock, president of the university, teaches geology, mineralogy, and mining. There are three courses of one term each offered in mineralogy and petrography and five in geology. The first includes physical and determinative mineralogy and petrography. The geology includes (1) physiography, (2) structural, (3) dynamical and stratigraphical geology, (4) engineering geology, and (5) paleontology. The number of specimens in the collections is estimated at 3,500, valued at \$3,000. Along with the collections of the

former Territorial geologist the institution has received the Arizona collection from the World's Fair.

ARKANSAS.

Geology is taught in 5 institutions in Arkansas, but forms a separate department in none. In the *Arkansas Industrial University, at Fayetteville*, biology and geology are combined in one department, with J. F. McNeil, professor, and S. E. Meek, adjunct professor. There are two terms' work in structural, dynamical, and physical geology, which is carried on by means of recitations, lectures, field and laboratory work. Two terms are devoted to historical geology, one to economic geology, one to paleontology, and one year to agricultural geology, making nine terms in all. The geological laboratory is provided with barometers, compasses, levels, pedometers, drawing apparatus, section-cutting machines, and paleontological collections.

Hendrix College, at Conway, has one term in mineralogy and two in geology, taught by G. H. Burr, professor of natural and physical science.

CALIFORNIA.

Geology is taught in California in 7 different colleges, but it is a separate department in only two, the State University, at Berkeley, and Stanford University, Palo Alto, both of which have an able faculty in geology, and are well equipped for practical work. The head professor in each institution has had charge of the department of geology since the opening of the respective universities in 1869 and 1892. The State as well as the institution is fortunate in both cases in having at the head of the department a man of international reputation.

University of California, Berkeley, Cal.—Joseph Le Conte, professor of geology and natural history; Andrew C. Lawson, associate professor of geology and mineralogy; F. L. Ransom, fellow in mineralogy; J. C. Merriam, fellow in paleontology. Geology was taught in the University of California at its opening in 1869 by Professor Le Conte, who has been there since that date.

The institution, being an old one for a Western State, has accumulated much valuable illustrative and working material. The estimated value of the mineral and rock collections is \$28,000; instruments, maps, etc., \$8,000. There are 1,382 volumes in the geological library and 55,000 specimens in the mineral and rock collections. The equipment is being added to constantly; a new building for geology is in contemplation, and it is expected that a paleontologist will soon be added to the teaching force.

Five courses are offered in geology, one of which is a graduate course; and two courses in mineralogy. Professor Le Conte offers a course in general geology, Professor Lawson offers courses in field geology, petrography, graduate course in crystallography, mineralogical terminology, and descriptive mineralogy, F. L. Ransom a course in the mineralogical laboratory, and Dr. Merriam a course in general paleontology.

The department of geology issues bulletins from time to time, giving, in the form of memoirs, results of research by some member or members of the faculty or graduate students, the object being an incentive to original research by the graduate student and an opportunity to give the results of his work to the scientific world. Four numbers of the bulletin were issued in 1893-94.

The California division of the United States Geological Survey has made its headquarters at the university since 1891, which enables students to see something of the practical side of the subject and come in contact with working geologists.

In the two upper classes in 1893-94 about 40 per cent of the students elected geology. There were four graduate students taking geology as a major study and three as a minor.

Leland Stanford Junior University, Palo Alto, Cal.—John C. Branner, professor of geology; J. Perrin Smith, associate professor of mineralogy and paleontology.

Professor Branner was State geologist of Arkansas at the time the university opened, October, 1891, and did not remove to the university until February, 1892, when the work in geology began. Professor Smith came in October, 1893.

For the short time the university has been open the department is fairly well supplied with working material. The number of volumes in the geological library, including Professor Branner's large private library, is 6,450. The value of the instruments, maps, etc., is \$1,654. No estimate is made on the mineral and rock collections, part of which is a lean collection.

The department of geology at present has part of one of the stone buildings surrounding the inner quadrangle. A large museum of natural history is under contemplation, as are also additions to the faculty.

Three regular courses of work are offered to undergraduates by Professor Branner in (1) dynamic and structural geology, (2) economic geology, (3) topographic geology, and three by Professor Smith in (1) paleontology, (2) mineralogy, (3) petrography. Advanced work by both graduates and undergraduates is pursued in the field and laboratory, under the direction or guidance of one of the professors. Professor Branner's wide experience on different geological surveys enables him to make the work practical from the start, and his students gain not only a theoretical but a working knowledge of geology.

In 1893-94 there were 12 students electing geology as their major subject, of which 5 were graduate students, while a much larger number pursued geology as a minor.

COLORADO.

In Colorado geology is taught in 6 colleges, and graduate instruction is offered in 1 of them—Colorado College.

State School of Mines, at Golden, is one of the best equipped colleges in the State for instruction in geology. The subject was first taught in 1874 by Arthur Lakes, and is now (1893-94) taught by Horace B. Patton. The mineral and rock collections are valued at \$8,000 and consist of 12,000 specimens, as follows: Rocks, 2,000; minerals, 6,000; economic products, 2,000; fossils, 2,000. The instruments, maps, etc., are estimated at \$1,200, and there are 175 volumes in the library.

Geology is required in the regular course in mining and metallurgical engineering and is elective in the other courses, but is elected by all entitled to do so. One year, three terms, is given to geology, including dynamical, structural, historical, and economic geology. The work is conducted by text-book, supplemented by lectures and field excursions. The same length of time, one year, is given to mineralogy, including crystallography, blowpiping, and determinative mineralogy. The college is admirably situated for field work in geology, Golden being in the foothills of the Rocky Mountains, 15 miles west of Denver.

Colorado College and Cutler Academy, at Colorado Springs, offers seven different courses in geology, mineralogy, and paleontology: (1) A course in general geology, including dynamical, structural, and historical geology, based on Le Conte's Elements of Geology; (2) mineralogy, both physical and chemical, one year, Dana's Mineralogy and Petrography; (3) lithology, half a year, Rosenbusch's Microscopical Physiography of Rock-Making Minerals, preparation of sections and determination of rocks; (4) economic geology, half a year, Tarr's Economic Geology; (5) invertebrate paleontology, one year; (6) vertebrate paleontology, one year; (7) geological surveying, one year. F. W. Cragin is professor of geology, mineralogy, and paleontology, and Joseph K. Surls is instructor in mineralogy and geology.

University of Denver, at Denver, offers three terms' work in geology and one in mineralogy. The subject was first taught in 1880 by Sidney H. Short, and at present (1893-94) by William C. Strong, professor of natural sciences, who also teaches chemistry. The mineral specimens in the collection number 2,000, and rocks 300.

University of Colorado, at Boulder, offers no course in geology at present. It has a collection of 1,300 specimens of native and foreign rocks, a microscope, and about 500 thin sections of rocks, along with a small collection of fossils.

State Agricultural College, at Fort Collins, offers two terms, twenty-six weeks, in geology, work based on Dana's New Text-Book of Geology. Lectures in economic geology are also given. Instruction in geology was first given in 1879 by Charles F. Davis, and at present by William P. Headden, professor of chemistry and geology.

Geology was taught for two terms at the *College of the Sacred Heart, Denver*, in 1889-90, but has since been discontinued.

CONNECTICUT.

Yale University, New Haven.¹—Faculty: H. S. Williams, George J. Brush, A. E. Ver-
rill, E. S. Dana, S. L. Penfield, Charles E. Beecher, L. V. Pirsson, and O. P. Marsh.

Geology appears to have been first taught in Yale in 1802. In that year Prof. Benjamin Silliman was appointed professor of chemistry, mineralogy, and geology. It is not possible to state whether geology was taught before that date or not, as the catalogues prior to 1822 do not contain the course of study. From 1822 to 1847 the catalogues simply state that a course of lectures was given to the seniors on chemistry, mineralogy, and geology. In the catalogue for 1847-48 it is stated that one term is given to each of the three sciences. It appears that five lectures were given a week. Professor Silliman was made professor emeritus in 1853, but he continued to give the instruction in geology down to 1855.

He was succeeded by Prof. James D. Dana, who graduated at Yale in 1833. From 1836 to 1838 he was assistant in chemistry to Professor Silliman. In 1838 he sailed as geologist and mineralogist on the Wilkes Exploring Expedition. After an absence of nearly four years he returned home, and during the thirteen following years he was engaged chiefly in preparing a report on the material collected. In addition to the geological and mineralogical collections he was also given charge of the zoological material. In 1850 he was appointed Silliman professor of natural history in Yale, but did not begin the duties of the chair until 1855. In 1864 the name of his chair was changed to that of geology and mineralogy. In 1894 he was made professor emeritus.²

Great credit must be given Professor Dana in the building up of the departments of geology and mineralogy at Yale. His works on mineralogy early gave the institution a leading position in the development of that science. The work has since been continued with great success by his successors, Professors Brush, E. S. Dana, and Penfield. Similarly his *Manual of Geology*, the first edition of which appeared in 1863, attracted to its author and the institution the attention of the entire scientific world.

The collections in the Peabody Museum are among the very best in the country. This is especially true of the vertebrate fossils and minerals. The collection of vertebrates is by far the best in America, though, because of the lack of space, only a small portion of the collection is now in the museum. Because of the totally inadequate capacity of the museum many of the fossils (vertebrate and invertebrate) and minerals are stored away in boxes. Under such conditions it is impossible to make even an approximation as to the number of specimens in the collections. Likewise in a museum possessing so many rare specimens, many of which are the only known ones in existence, it is impossible to assign a commercial value to the collections.

As would be expected in an institution of Yale's age and standing, the department of geology is well equipped with maps, models, and all instruments needed for research work. The library of the university contains about 1,600 volumes given entirely to the subjects of geology, paleontology, and petrology. This number, however, does not include such serials as the *American Journal of Science*, etc., which are given only in part to the above-named sciences. Counting such serials, the number of volumes would probably be double that above given. In addition to these, several of the professors have large private libraries, to which graduate students have access.

¹ Contributed by J. A. Bownocker, graduate student in geology at Yale, 1894-95.

² The announcement of his death, April 15, 1895, came after the above went to press.

The number of graduate students for 1894-95 is five.

The courses offered for the same year are as follows:

(1) *Mineralogy*.—Blowpipe analysis; determinative work in mineralogy; descriptive mineralogy; crystallography. Opportunities are offered for original investigation.

(2) *Petrography*.

(3) *Historical geology and paleontology*.—This work is chiefly in the laboratory. It is supplemented by readings and informal lectures. Any amount of time may be given to this course.

(4) *The geological history of organisms*.—Three hours per week during the year are given to this subject. The course is taught chiefly by lectures.

(5) *Geology (general course)*.—Two hours per week during the year.

(6) *Physical geography*.—Two hours per week during the year.

(7) *Mineralogy and crystallography*.—Two hours per week during the year. Practical study of mineral species by means of the blowpipe and other methods; mathematical study of crystals.

(8) *Descriptive mineralogy*.—One hour per week during the year. This is an advanced course in the study of mineral species.

(9) *Invertebrate paleontology*.—Systematic study of the structure, development, and affinities of one or more classes of fossil animals. Opportunities are offered for original investigation.

Courses 4, 5, 6, 7, and 8 are under-graduate courses, but are open to graduates. The others are open only to graduates.

Outside of Yale University, the chief educational center for Connecticut, geology is taught at three other institutions.

At *Wesleyan University, Middletown, Conn.*, several different courses in geology are given by Rev. William North Rice, professor of geology. (1) A course in elementary geology with LeConte's *Compend of Geology*, supplemented by lectures; (2) a course in advanced geology based on LeConte's *Elements of Geology*; (3) a course in physical geography (Geikie's *Elementary Lessons*); (4) mineralogy.

The department is well equipped with material, having collections in mineralogy, lithology, physical geology, and paleontology. The minerals and rocks number 11,500 specimens, which include 300 species of minerals and many more varieties. There are 4,000 Paleozoic fossils, 800 Mesozoic, and 2,000 Cenozoic. The department of zoology has 100,000 specimens of invertebrate forms and several thousand vertebrate forms.

Geology has been taught in *Trinity College, Hartford*, since 1826, being first taught by Prof. Frederick Hall. W. H. C. Pynchon, instructor in natural science, gives a short course of lectures in geology and mineralogy at present (1894).

At *Storrs Agricultural College, Storrs*, B. F. Koons, the president of the college, teaches geology for one term, using Shaler's *Text-Book of Geology*.

DELAWARE.

The *State College for Colored Students, Dover*, founded in 1891, offers one term in geology and one term in mineralogy.

Delaware College, Newark, offers two terms in geology, which is taught by T. R. Wolf, professor of geology, who also teaches chemistry and mineralogy. The subject was first taught there in 1871 by the present instructor.

DISTRICT OF COLUMBIA.

Geology is taught at 4 institutions in the District of Columbia, in one of which, *Columbian University*, graduate instruction is offered.

No reply was received from *Columbian University*. In the catalogue for 1892-93, three courses are offered in mineralogy, one in petrography, and five in geology, taught by W. S. Yeates and G. V. Chandler. Mr. Yeates has since resigned. Graduate

instruction is offered by Prof. G. P. Merrill, one of the curators of the Smithsonian Institution. In the general geology, courses are offered in physical geography, structural, dynamical, and historical geology, paleontology, and paleobotany; LeConte's Elements of Geology as a text-book and Dana's Manual of Geology and Merrill's Stones for Building and Decoration as reference books. In the graduate work, use is made of the large collections in the Smithsonian Institution. In 1893-94 two graduate students took geology as a minor, while there were none pursuing it as a major.

Geology is taught in *Howard University* for one term in the senior year by Richard Foster, professor of natural history, who also teaches mineralogy, zoology, botany, and physiology. The subject was first taught in 1874 by J. R. Golding. The subject is elective for classical students, and in 1893-94 it was elected by all those eligible, 12 students taking the course. The university also gives a course in geology in university extension work; 57 teachers in the Washington public schools took the course in 1893-94. The number of specimens in the museum is estimated at about 5,000; the students have access to the large collections in the National Museum.

Geology is taught for one term each in *Georgetown College* and *Gallaudet College*.

FLORIDA.

Geology is taught for two terms each in *Rollins College*, *Winter Park*, and *Florida Conference College*, *Leesburg*. Both are small colleges, and in neither is the subject developed to any extent. The subject is taught for one term at the *John B. Stetson University*, *Deland, Fla.*

GEORGIA.

Geology is taught in 8 institutions in Georgia at present, and one other, the Georgia School of Technology, contemplates a course in geology. In no college in the State does it form a separate department or form a prominent feature in the curriculum. In only one, *Methodist Episcopal College*, at *Birmingham*, is it taught a full year. *Bowdon College* and *Young Harris College* each offer two terms; *Emory College*, *Atlanta University*, and *Clark University*, one term each. The University of Georgia in its catalogue offers somewhat extended courses in geology, mineralogy, and lithology, but the chair of geology is temporarily vacant, and the subject is taught for one term by the professor of chemistry.

IDAHO.

Geology is taught for one term in the *University of Idaho*, at *Moscow*, by Prof. C. P. Fox, professor of agriculture. The aim is to unite this subject with mining and metallurgy in the future.

ILLINOIS.

Illinois has 20 colleges in which geology is taught, in 3 of which it is a separate department, offering several courses and graduate instruction, but in 1893-94 there were graduate students in geology at only 1 of these institutions—the University of Chicago.

University of Chicago, Chicago, Ill.—Faculty: T. C. Chamberlin, head professor of geology; R. D. Salisbury, professor of geographic geology; J. P. Iddings, professor of petrology; R. A. F. Penrose, jr., professor of economic geology; W. H. Holmes, professor of archæologic and graphic geology; C. R. Van Hise, nonresident professor of pre-Cambrian geology; O. C. Farrington, instructor in mineralogy; E. C. Quereau,¹ assistant in paleontology. Fellows: H. B. Kimmel, T. C. Hopkins, C. E. Pect, C. H. Gordon. Graduate scholar, E. C. Perisho.

¹ Resigned, 1895. Succeeded by Stuart Weller.

The department of geology is at present in Walker Museum, which, like the other college buildings, is of the famous Bedford limestone, and is valued at \$100,000. A separate building is contemplated for geological laboratories and lecture rooms. The first floor of Walker Museum is devoted strictly to museum purposes. There are three large cases of economic products, three of minerals, four of fossils, and two of archaeological specimens. There are, besides, numerous plaster models, large fossils, and casts. The second floor consists of lecture room, library, laboratory, and offices of the faculty. The third floor is devoted to botany, anthropology, and vertebrate paleontology. The basement is used for storerooms and laboratory. The library contains 2,500 volumes and 2,500 pamphlets. The instruments, maps, etc., are valued at \$3,000, and the mineral, fossil, and rock collections at \$9,000, and estimated to embrace between 200,000 and 300,000 specimens. Additions are constantly being made to the library and collections, \$10,000 being spent for that purpose during the present year (1895). Among the special collections of note are (1) the Dr. Washburn collection, rich in Niagara fossils; (2) the Dr. James collection, rich in Cincinnati types; (3) the large series of ores and other economic products from the World's Fair and the Field Museum, and (4) numerous series of igneous, sedimentary, and metamorphic rocks from western United States and Europe.

Geology is one of the departments that began with the opening of the university in 1892, and, although so recently established, so liberal have been the appropriations that it stands among the foremost colleges in its facilities for giving instruction in geology. Twenty-nine courses, varying in length from one term to one or more years, are offered in the catalogue, not all of which, however, are open during any one quarter.

Professor Chamberlin offers one course in geologic life development and another in principles and working methods of geology. The first continues one quarter and constitutes historical geology studied on the biotic side. The second continues two quarters and varies from time to time; it includes the investigation of such problems as mountain and plateau building, oceanic basins, the tides, the age of the earth, condition of the earth's interior, vulcanism, etc.

Professor Salisbury gives courses in (1) physiography; (2) structural geology and continental evolution; (3) geographic geology, and (4) general geology. He also offers laboratory work in geographic and in dynamic geology. During the last term (six weeks) of the summer quarter he conducts a class in the field. The course in physiography given by Professor Salisbury in the autumn quarter is repeated by one of the fellows during the winter quarter.

Professor Iddings offers courses in crystallography, mineralogy, petrography, and petrology. Mineralogy is studied with especial reference to the optical and physical properties as introductory to petrography. Courses of lectures are given on the classification, genesis, origin, etc., of rocks, accompanied by laboratory study of microscopic sections of classified series of rocks. The subject can be pursued as long as the student desires.

Professor Penrose, during the winter quarter, gives a course of lectures on economic geology in which especial stress is laid on the ore deposits, but the non-metallic products, such as coal, natural gas, clays, soils, fertilizers, etc., are discussed. He offers another course on the chemistry of the ore deposits which has not yet been given.

Professor Van Hise gives a course of lectures accompanied by laboratory work on pre-Cambrian geology during the first term (six weeks) of the winter quarter each alternate year. He discusses the nature, character, and distribution of the pre-Cambrian rocks and the special methods of field work.

Dr. Quereau gives a course in invertebrate paleontology continuing through the year. He resigned the spring quarter of 1895.

W. H. Holmes is announced for a short course, one hour per week for six weeks, in graphic geology, and O. C. Farrington of The Field Columbian Museum is

announced to give a short course in determinative mineralogy beginning in 1895 or 1896.

There were 13 graduate students in geology present during one or more quarters in 1893-94.

The Journal of Geology is published semiquarterly by the department, volume 1 beginning in 1893.

Northwestern University, Evanston, Ill.—Geology was first taught at the Northwestern University in 1862 by Oliver Marcy, the present professor of geology. A. R. Crook, professor of mineralogy and petrology, began his work here in 1893. At present geology is taught only in the college of liberal arts. A school of technology is contemplated in which economic geology will be taught. In 1893-94 30 per cent of the students elected geology. The estimated value of the instruments, maps, etc., is \$2,000; of the mineral and rock collections, \$6,000. There are 6,000 mineral and rock specimens, 3,000 fossils, and 300 volumes in the geological library. Besides the classified mineral and rock collections there is a large quantity of material from the World's Fair not yet arranged.

General geology is taught one year by Professor Marcy, including dynamical and structural geology, geography, and historical geology, with construction of maps and sections, and laboratory work in paleontology. This is followed by elective work in geology of special localities or special problems in geology. Professor Crook gives courses of lectures, accompanied by laboratory work, on systematic paleontology, mineralogy, petrology, and economic geology. There are five courses with three terms in each course, making fifteen terms in all. Instruction is largely given by lectures and laboratory work, Le Conte's Elements of Geology being used in general geology and Dana's Manual of Mineralogy and Petrography in mineralogy.

In 1893-94 there were 7 students taking geology as a major study and 66 taking it as a minor. There were no graduate students in geology.

University of Illinois, Urbana, Ill.—Charles W. Rolfe, professor of geology, J. G. Meiner, assistant in mineralogy and geology. Geology was first taught in the University of Illinois in 1870 by Prof. D. C. Taft. At present there are three courses offered in geology and two in mineralogy. (1) A major course in geology, including dynamical, petrographical, and historical geology, paleontology, and economic geology (580 hours). Instruction is largely by lectures, with the following reference books: Geikie's text-book in general geology, Nicholson, Zittel, and Miller in paleontology, and a blue-print adaptation of Rosenbusch in petrography. A supplementary course in individual investigation follows the major course. Two shorter courses are offered, one (110 hours) adapted to engineers and one (110 hours) in general geology to students not specializing in geology. About 6 per cent of the students elected geology in 1893-94. There are no graduate students.

The department of geology occupies the same building with botany and zoology, the building and furniture being valued at \$100,000. The instruments, maps, etc., are estimated at \$1,500; the mineral and rock collections number 5,000 specimens, valued at \$5,000; 50,000 fossils, valued at \$25,000. There are 900 volumes in the geological library exclusive of periodicals. The apparatus and collections are receiving many additions.

Austin College, Effingham, Ill., offers courses in geology extending over one, two, four, or eight terms. The subject was first taught in 1892 by W. J. Brinckley, professor of sciences, who is still there and teaches in addition zoology, botany, chemistry, and physics. In 1893-94 85 per cent of the students eligible elected geology. The collections are valued at \$1,250 and there are 100 volumes in the library.

Illinois Wesleyan University, Bloomington, Ill., offers two terms in geology and mineralogy, taught by R. O. Graham, professor of chemistry. Geology is elective and 89 per cent of eligible students elected it in 1893-94. It will be interesting to many to know that geology was first taught in Illinois Wesleyan in 1865 by Maj. J. W. Powell, late director of the United States Geological Survey.

At *Greer College, Hoopes-ton, Ill.*, geology will be taught first in 1895 by the president, S. W. Dixon.

At *Lake Forest University, Lake Forest, Ill.*, geology is taught for one year by Robert A. Harper, professor of botany, who has been teaching it since 1891. A separate department is contemplated in the future.

At *Augustana College* geology was first taught in 1879 by Dr. Joshua Lindahl, recently State geologist. It is now taught for two terms by J. A. Udden, professor of geology and natural history, who teaches in addition zoology, botany, physiology, and physical geography.

INDIANA.

Geology is taught regularly in 13 colleges in Indiana, but forms a separate department in only 1—the State University—and in only 1 is graduate instruction offered.

Indiana University, Bloomington, Ind.—V. F. Marsters, professor; J. F. Newsom, assistant. Geology was first taught in Indiana University in 1854 by Robert Milligan, professor of natural sciences and chemistry. The work consisted of lectures and recitations for one term, Hitchcock's Geology being the text-book used. Subsequent instructors were Profs. Theophilus A. Wylie, Richard Owen, David Star Jordan, J. C. Branner, V. F. Marsters, and Instructors C. E. Siebenthal, E. M. Kindle, and J. F. Newsom.

The department of geology was first separated from that of natural sciences in 1886, with J. C. Branner as professor of geology. Professor Branner was absent on leave from 1888 to 1891, inclusive, and in 1892 Vernon F. Marsters was elected professor of geology.

In 1864 Prof. Richard Owen brought to the university his fine collection of minerals and fossils, accumulated when he was State geologist, along with the instruments, charts, etc., of the survey. Later, in 1870, the large collection of David Dale Owen, comprising 85,000 specimens, was purchased. Ward's collection of casts was added by purchase in 1874. A unique feature of instruction in 1864 was one room fitted up especially to facilitate an intimate acquaintance with the geology of Indiana, by exhibiting the various rocks of the State in their correct relative position on a large table, which allows about a foot and a half square to each county. In 1883 fire destroyed nearly all the geological collection.

At present the department is supplied with about 225 varieties of minerals, 250 crystal models, several thousand paleontological specimens, two petrographical microscopes, and sets of thin sections of minerals and rocks.

The following courses are now offered: (1) Principles of geology—dynamical, structural, and historical—lectures, and laboratory work; (2) mineralogy, lectures, and laboratory work; (3) lithology; (4) petrography; (5) economic geology; (6) paleontology; (7) field work in geology.

Franklin College, Franklin, Ind., gives one term to geology, which is taught by D. A. Owen, professor of biology. The subject was first taught in 1845 by J. B. Lisdale. The cabinet has a collection of 35,000 specimens, valued at \$9,157, which is largely the gift of S. S. Gorby, State geologist.

De Pauw University, Greencastle, Ind., has no regular instruction in geology. Occasionally some other department gives a course of one term in the subject.

Hanover College, Hanover, Ind., is probably where geology was first taught in Indiana. It was taught by John H. Hamby in 1836. At present it is taught for one term by Glenn Culbertson, professor of physics and astronomy. The cabinet is said to contain many thousand specimens, but no definite number or value is given.

Purdue University, Lafayette, Ind., has one term (nineteen weeks) in geology, taught by Stanley Coulter, professor of biology. The collections, containing about 20,000 specimens, are valued at \$3,000.

Rose Polytechnic Institute, Terre Haute, Ind., offers no regular course in geology, but every two years a course of twelve lectures is given to the junior and senior classes by some eminent geologist. Courses have been given by Professors Winchell, Branner, Orton, and Claypole.

Butler University, Irvington, Ind., offers one year in geology and mineralogy, beginning with crystallography followed by mineralogy, lithology, dynamical, structural, and historical geology, taught by Henry L. Bruner, professor of biology and geology. The subject was first taught in 1859 by Ryland T. Brown. The present value of the equipment is estimated at \$300 and the number of volumes in the geological library at 400.

At *Wabash College, Crawfordsville, Ind.*, geology was first taught in 1845 by E. O. Hovey, professor of chemistry and geology. Instruction in geology is combined with zoology, two years being given to geology. The chair is vacant at present. The college has a good illustrative collection of minerals, particularly rich in ores and rarer minerals. There are large collections of fossils especially rich in Devonian corals and Subcarboniferous crinoids.

INDIAN TERRITORY.

Geology and mineralogy are taught for one term at *Indian University, Bacone, Ind. T.*, by C. H. Maxson, professor of mathematical sciences and economics.

IOWA.

Geology is taught in 17 institutions in Iowa, in none of which it forms a separate department. However, it is practically a separate department at the State university, although animal morphology and physiology is combined with it in name. A separate instructor takes charge of these branches, so that Prof. Samuel Calvin, who is also State geologist, gives his whole time to geology. The subject was first taught, in 1864, by T. S. Parvin, of the State University.

The museums are well stocked; it is estimated that there are 30,000 specimens, valued at \$10,000, collected chiefly by the State geological survey. The Calvin collection of American and European fossils includes more than 6,000 specimens. There is also an extensive collection of vertebrate forms, including the famous Hornaday collection. There are about 10,000 specimens of birds and a great many mammals.

There are four courses in geology at present, extending over two years, which include a course in general geology, covering lithology, dynamical and historical geology, and geology and paleontology of the Northwest, and selected courses in geology and paleontology for special students. It is expected to soon make geology a separate chair, with one or more additional instructors. Graduate instruction is given in geology leading to the master's degree.

At *Cornell College, Mount Vernon*, geology was first taught, in 1857, by S. N. Fellows. It is now taught for two terms by William H. Norton, professor of geology. One course is given in physical geology, with special attention to rivers and Pleistocene geology. The second course contains physical geology, with a short course in determination of ores and rock-making minerals by blowpipe analysis and microscopical petrography; also an outline of historical geology. Geology is elective, and in 1893-94, 66 per cent of the seniors and 47 per cent of the juniors elected it. The college has good illustrative collections, containing in all more than 11,000 specimens.

In *Wartburg Teachers' Seminary, Waverly*, geology and mineralogy are taught for three terms by Prof. Fred Lutz, president. *Wartburg College*, recently removed from Waverly to Clinton, had a course of three terms in geology, taught by Professor Lutz from 1886 until the removal of the college in 1894.

At *Iowa College, Grinnell, Iowa*, geology and biology are in one department, with H. W. Norris professor and A. J. Jones instructor. Mr. Jones has charge of the geology, which is taught for one semester. It is expected soon to enlarge the course to two years in length. The subject was first taught, in 1853, by D. S. Sheldon.

In *Drake University, Des Moines, Iowa*, geology is taught for one year by L. S. Ross, professor of biology and chemistry. The course includes (1) crystallography, mineralogy, and lithology; (2) physiography and dynamical geology; (3) historical geology and paleontology.

KANSAS.

In Kansas geology is taught in 16 colleges, but in only 1, the *University of Kansas, Lawrence*, has it been made a separate department or is it taught more than one year. No reply was received from several of the colleges, and only such data are given as could be obtained from the catalogues. No record is at hand concerning Lane University, Leecompton, or Ottawa University.

University of Kansas, Lawrence, is well equipped for giving instruction in geology. There are courses in (1) physical geology, (2) historical geology, (3) elements of mineralogy, (4) systematic mineralogy, (5) elementary petrography, (6) economic geology, (7) systematic paleontology, and graduate courses in (8) advanced mineralogy, (9) advanced petrography, (10) dynamic geology, (11) special work in paleontology, (12) field work in geology, mineralogy, and petrography.

The geological and mineralogical cabinets are said to contain about 100,000 specimens, chiefly from Kansas and the Rocky Mountains. Large collections are also available in zoology—50,000 or more specimens. Prof. Samuel W. Williston teaches historical geology and paleontology. Erasmus Haworth has charge of mineralogy, petrography, physical geology, and economic geology.

In *Baker University, Baldwin, Kans.*, geology is taught for two terms and mineralogy for one, Le Conte's text-book being used. The museum is said to contain 25,000 specimens, of which 10,000 are classed as geological and 3,600 as mineralogical.

Washburn College, Topeka, Kans., offers two years in geology, a half year on Le Conte's Elements, a half year on historical geology and economic geology. Paleontology may be taken for one year or a half year. Such is the course under Prof. Charles S. Prosser, who resigned in 1894 to go to Union College, New York. The chair is vacant now (1894-95).¹

KENTUCKY.

In Kentucky geology is taught in 9 institutions, but forms a separate department in none, and in very few is it taught more than one term. At *Central University, Richmond*, geology is taught by R. M. Parks, professor of chemistry and geology, for two terms, mineralogy for one term, and physical geography for one term. In *Center College of Kentucky, Danville*, it is taught for five months; at *Ogden College, Bowling Green*, it is taught for two terms, and one term each at (1) *Georgetown College, Georgetown*; (2) *Kentucky University, Lexington*; (3) *Bethel College, Russellville*; (4) *St. Mary's College, St. Marys*.

LOUISIANA.

Geology is taught in 9 institutions in Louisiana, but in only 1, the *Louisiana State University*, is it given much prominence. The catalogue of Louisiana State University, Baton Rouge, offers 6 courses in geology and 2 in mineralogy. These are classed as (1) meteorology, (2) physical geography, (3) elementary geology, (4) economic geology, (5) general critical geology, (6) petrography, (7) general determinative mineralogy, (8) optical crystallography. Courses 5 and 6 may be taken as graduate work. The subject is taught (1893-94) by W. W. Clendenin, professor of geology, mineralogy, and botany, formerly at the University of the State of Missouri, and recently appointed State geologist. The mineral collections are said to contain more than 5,000 specimens, exclusive of the large collection of ores obtained from the New Orleans Exposition, and an almost equally large collection of fossils.

The catalogue of *Tulane University, New Orleans*, offers a course in the principles of geology, one in mineralogy and crystallography, one in paleontology, and one in practical and economic geology. A communication from the president states that

¹Since the above went to press, G. P. Grimsley, recently Ph. D. from Johns Hopkins University, has been appointed.

no students were pursuing the study of geology in 1893-94, and that it has been excluded from many of the courses, but it is hoped soon to have the subject taught more thoroughly in the graduate school.

Geology is taught for two terms at *New Orleans University, New Orleans*, by the president, L. G. Adkinson. It is taught for one term each in *Leland University, New Orleans*, and *Keatchie Male and Female College, Keatchie*.

MAINE.

Geology is taught in 4 institutions in Maine, but in only 1, *Colby University*, is it a separate department, or is it taught more than one term.

The department of geology and mineralogy at Colby University has been well developed by William S. Bayley, professor of mineralogy and geology, who is widely known among students of mineralogy and petrography. The catalogue for 1892-93 offers two terms in mineralogy, one in physical geology, one in inorganic geology, and one in organic geology.

The laboratory is well supplied with instruments and materials for the study of mineralogy and petrography. The mineral collection contains more than 3,000 specimens. The State geological collection is at the university.¹ There are several hundred thin sections, photographs, lantern slides, etc. The department occupies the second floor in Coburn Hall (valued at \$40,000), the ground floor of which is occupied by the chemical department.

Geology is taught for one term each in *Bowdoin College, Brunswick*; *Bates College, Lewiston*; and *Maine State College, Orono*. In Bowdoin College mineralogy is taught by the professor of chemistry, and geology by the professor of biology. It is hoped soon to establish a chair of geology and mineralogy.

MARYLAND.

Geology is taught in 8 colleges in Maryland, but in only 1, *Johns Hopkins*, does it form a separate department.

Johns Hopkins University has since 1883 been one of the leading universities in this country for graduate instruction in geology, particularly in petrography. The subject was first taught in 1883 by Dr. G. H. Williams, who from that time until his death, in 1894, attracted students in geology from all parts of the country, and sent them out enthusiastic teachers of the subject. Instruction in geology is at present (1895) under the guidance of William B. Clark, professor of organic geology, assisted by Edward B. Mathews, instructor in mineralogy and petrography. Courses of lectures are given by G. K. Gilbert and Bailey Willis, of the United States Geological Survey, and Archibald Geikie, Director-General of the Geological Survey of Great Britain.

Courses are offered to both graduate and undergraduate students, but the work is almost entirely with graduates. During 1893-94 there were 12 graduate students taking geology as a major and 6 taking it as a minor.

The following courses are announced for 1894-95: (1) general geology, by Professor Clark and Dr. Mathews, lectures and field excursions; (2) paleontology, by Professor Clark; (3) historical geology, by Professor Clark; (4) mineralogy, by Dr. Mathews; (5) petrography, by Dr. Mathews—divided into two parts, (a) rock-forming minerals, (b) rock classification given in alternate years; (6) physiographic geology, by Mr. Gilbert, a course of ten lectures on the origin of the forms of the earth's surface; (7) stratigraphic and structural geology, by Mr. Willis, a sequel to course 6, a discussion of the processes which result in the formation and upheaval of sedimentary rocks.

Laboratory work is arranged to accompany the lecture courses. Facilities for field work are exceptionally good, owing to the great variety of geological formations

¹ A catalogue of the Maine geological collection, with a brief outline history of the two surveys of the State, has been recently (1890) published by Professor Bayley and Mr. F. P. King.

represented in a small area. Several specified areas have been investigated by students and the results embodied in theses for the doctor's degree.

Another feature of the work is the biweekly conference in which recent investigations are reviewed by the students under the guidance of the instructors. Each advanced student also delivers a class-room lecture upon some special assigned topic.

The geological laboratory is situated in Hopkins Hall and comprises 19 rooms on the second and third floors. The main room on the third floor contains the collections and library of the late Prof. G. H. Williams. A smaller room on the same floor contains the books and collections of the late Prof. H. Carvill Lewis. Besides these two special libraries there is the regular department library and the Peabody Library in the city, and the valuable libraries in Washington may be consulted. The collections are especially rich in crystalline rocks and in Cretaceous and Tertiary fossils. Some of the most important collections are (1) the private collection of Professor Williams, (2) Kranz collection of European fossils, (3) Hill collection of Texas rocks and fossils, (4) Allen collection of minerals, (5) Stürtz collection of European rocks, (6) Lehman collection of Saxon rocks, (7) Lewis collection of rocks and their sections, (8) private collection of Professor Clark. The laboratories are well equipped in apparatus.

Many valuable maps and papers on the local geology have been published by the university, by the United States Geological Survey, and in the scientific journals, by and under the direction of the department.

In a number of Maryland colleges geology is not taught at all, as (1) *Washington College, Chestertown*; (2) *St. Johns College, Annapolis*; (3) *United States Naval Academy, Annapolis*; and (4) *St. Charles College, Ellicott City*.

MASSACHUSETTS.

In Massachusetts geology is taught in 11 colleges and universities, in most of which (8) it forms a separate department and occupies a prominent place in the curriculum.

*Geology in Harvard University, Cambridge.*¹—The study of geology was introduced at Harvard in 1848 by Louis Agassiz, the instruction being practically limited to historical geology and glaciology. Teaching in the subject was considerably expanded during the time of the Hooper Mining School, 1865-1875, there being several teachers of the different branches of geology. With the decline of that school, the dean, Prof. J. D. Whitney, alone remained at Harvard, his professorship being established upon the funds of the school. N. S. Shaler became associated with the college in 1864 as assistant in zoology; later he became instructor in paleontology, and in 1869 professor of paleontology. The title has since been changed to professor of geology. W. M. Davis, assistant in geology in 1876, instructor in 1878, assistant professor of physical geography in 1885, and professor in 1890, has devoted particular attention to physical geography. The division of petrography was instituted under J. E. Wolff as instructor in petrology in 1886, and assistant professor in 1892. Mineralogy, now taught by Assistant Professor Wolff, has always been a division of the chemical department at Harvard.

Instruction.—The geological faculty in 1894, and the courses of instruction offered, are as follows: Josiah D. Whitney, Sturgis-Hooper professor of geology—economical geology,² and half courses on mineral veins and metalliferous deposits, geographical methods and results. Nathaniel S. Shaler, professor of geology—lectures in elementary geology, lectures in paleontology, lectures in historical geology; also director of research work in geology and paleontology. William Morris Davis, professor of physical geography—half courses physical geography, meteorology, physical geography of the United States, physical geography of Europe; courses in

¹ Contributed by Leon S. Griswold, instructor in geology at Harvard.

² Courses, unless otherwise specified, are full courses; that is, they require about nine hours per week of a student's time throughout the college year. Half courses require about half as much time.

research in physical geography and meteorology. J. Eliot Wolff, assistant professor of petrography—mineralogy, petrography, crystallography, and the physics of crystals, petrographical research; half course on geology and mineralogy of building stones. Robert T. Jackson, instructor in paleontology—laboratory work and lectures, in conjunction with Professor Shaler, in two courses, paleontology and historical geology. Henry L. Smyth, instructor in geological surveying—half courses in mining geology, geological surveying, and pre-Cambrian geology of North America. J. B. Woodworth, instructor in geology—general critical geology, half course in glacial geology. Robert De Courcey Ward, assistant in meteorology—elementary meteorology, with Professor Davis. Richard Elwood Dodge, instructor in geology—laboratory work and lectures in elementary geology. Leon S. Griswold, instructor in geology—advanced geological field work, in cooperation with Professors Shaler and Davis and Assistant Professor Wolff; elementary physical geography, with Professor Davis. Charles Livy Whittle, assistant in mineralogy and petrography—laboratory work in mineralogy and petrography, with Assistant Professor Wolff. R. A. Daly, assistant in geology—laboratory work in elementary geology. C. R. Eastman, assistant in paleontology—laboratory work in paleontology and historical geology.

Besides the regular courses of the college year noted above, there are summer-school courses in geology, physical geography, and petrography also given by some of the above teachers with others not mentioned. In 1894 the additional instructors were G. E. Ladd, Prof. A. P. Brigham, of Colgate University, and Mr. H. B. Kimmel, fellow at the University of Chicago.

The geological courses are carefully correlated to form a broad systematic course of study. Thus the elementary courses—geology, physical geography, meteorology, and mineralogy—lead to general critical geology, physical geography of the United States and Europe, petrography, paleontology, mining geology, and geological surveying, and the second summer-school course in field geology. The student is then prepared to take courses in historical geology, glacial geology, economical geology, pre-Cambrian geology of North America, geology and mineralogy of building stones, mineral veins, and metalliferous deposits, geographical methods and results, or begin original investigation in geology, paleontology, physical geography, meteorology, or petrography. The research work in any line may be followed with profit for more than one year, as is commonly the custom with graduate students. The results of original work, reviews of books and articles, and items of geologic interest are presented weekly by advanced students and instructors at an informal meeting called the geological conference.

For 1894-95 eight students in the university, who are preeminently geological students, have been assigned scholarships, but besides these many scholarship students take more or less geology as part of their work. Eleven graduate students in 1893-94, and again in 1894-95, have taken geology.

The special equipment of the geological department is as follows:

(1) To the division of geology belong about 200 unmounted and 175 mounted maps, about 260 models, most of which are in duplicate sets of small size for class use, 2,400 specimens, 500 lantern slides, and a special library of 125 volumes.

(2) The paleontological division has about 12,000 specimens arranged in 3,092 lots and catalogued in two collections, one arranged zoologically, the other stratigraphically, three microscopes with 404 slides, 70 wall diagrams including a set of Zittel's diagrams, and a special library of 45 volumes besides pamphlets.

(3) Physical geography and meteorology have 100 wall maps, an unknown number of unmounted maps, probably several thousand, 43 models, 500 lantern slides, and a library of perhaps 500 volumes, which includes nearly all the journals in meteorology.

The equipment in petrography consists of 7 microscopes, goniometers, and other petrographical apparatus, models, 11,000 specimens, 5,000 thin sections, 150 lantern slides, and library of 50 volumes.

As stated above mineralogy is not included in the geological department in Harvard University, but its resources should be mentioned in connection with geology. It possesses 15,000 specimens (estimate probably low), 2,000 specimens for students' use, 2,000 wooden models, 200 glass models, polariscopes, goniometers, Nicol prisms, lenses, microscopes, assay balances, chemical equipment, and library of 300 volumes.

More general property of the geological department, though used by some divisions more than others, are the geological workshops with machinery run by electric power, electric lanterns for slide projection, and the Gardner collection of photographs, the latter containing about 3,000 views. The small libraries enumerated are for immediate reference; for more special work there are the Whitney Geological Library, the Pumpelly Library, temporarily available, and the large number of works included in the museum and college libraries, together containing 350,000 bound volumes or more; the students are referred to the exhibition collections of the museum of comparative zoology, and occasionally reference is made to the collections and library of the Boston Society of Natural History and to the Boston Public Library.

Eight large rooms in the museum of comparative zoology are occupied by the geological department for laboratories, lecture and recitation rooms; three basement rooms are used as workshops, another is fitted up as a chemical laboratory, and there is a dark room for photographic work. Six rooms are devoted to mineralogy, besides a large exhibition room with gallery containing the mineral collection. Basement rooms contain assay furnaces and chemical equipment.

Massachusetts Institute of Technology, Boston.—Faculty: William H. Niles, professor of geology and geography; William O. Crosby, assistant professor of structural and economic geology; George H. Barton, instructor in geology. For 1893-94 the institute offers 20 different courses in geology, mineralogy, and paleontology, aggregating 1,200 hours, divided as follows: (1) Physical geography, 45 hours; (2) mineralogy, two courses, 150 hours; (3) structural and chemical geology, two courses, 75 hours; (4) stratigraphic geology, 45 hours; (5) historical geology, 30 hours; (6) paleontology, two courses, 135 hours; (7) economic geology, three courses, 150 hours; (8) physiographic geology, 45 hours; (9) field and laboratory work, not included in the above, three courses, 360 hours; (10) climatology, 30 hours; (11) micro-lithology, 90 hours; (12) hydrography, 45 hours; (13) geological memoirs, 30 hours.

It will be observed that the instruction covers nearly the whole field of geology, with the practical as well as the culture side developed. By pursuing different lines students may fit themselves for mining engineering or for State or Government survey work on structural, economic, or topographic lines. The importance of topography in its relations to geology is emphasized.

In *Amherst College, Amherst*, geology was first taught in 1826 by the well-known geologist, Edward Hitchcock. At present it forms a separate department, in charge of Ben K. Emerson, professor of geology, who teaches geology for three terms, the first term being devoted to structural and dynamical geology, the second to historical geology and physical geography, the third term to field and laboratory work. The aim of the third term's work is to teach the use of instruments and methods of field work, and students are required to prepare a map or thesis on the work. There is also a popular course, in which the elements of geology are taught in one term. There is one term's work in mineralogy, about half of which is devoted to crystallography and half to physical and chemical properties of minerals. The college is well supplied with illustrative material, the collections being valued at \$75,000, and the number of specimens estimated at 40,000 to 50,000. A new geological building is proposed in the near future.

Geology was formerly taught in the *Massachusetts Agricultural College* by Henry W. Parker, from 1870-79; by B. K. Emerson, as a nonresident lecturer, 1879-82; by President Chadbourne, 1883; by President Greenough, 1883-86; by Professor Fernald, 1887-90, since which time it has not been taught.

¹From the programme for 1892-93.

Geology is taught for two terms and mineralogy for one term at the *French-American College, Springfield*. It has been taught since 1892 by Z. W. Kemp.

In *Boston University* the geology is taught for one term by Prof. William H. Niles. The instruction is given in the Massachusetts Institute of Technology with the use of the equipments found there.

The subject is taught in a desultory way in *Boston College* by a few lectures at irregular times.

At *Tufts College* geology and mineralogy have been taught by Prof. John P. Marshall since 1855, a period of forty years. Mineralogy is taught the first half year, and geology, lithology, and paleontology the second half year. The museum of natural history, erected in 1882-88, at a cost of \$50,000, has recently had an additional wing, costing \$25,000. No estimate is given of the valuable geological material, which, besides the many thousand dollars' worth purchased, contains the collection of Professor Marshall for the past forty years.

In *Williams College, Williamstown*, geology was first taught in 1829 by Chester Dewey. It was taught by Ebenezer Emmens in 1833, and has been taught continuously since 1829, except a short interval from 1890 to 1892. It was revived in 1893, with T. Nelson Dale as instructor. The subject is now taught for two terms, with much emphasis laid on the field work. The building for geology is valued at \$25,000 and the collections at \$8,000.

Geology has been taught at *Worcester Polytechnic Institute* since 1888 by the president, Homer T. Fuller¹. Geology is taught for a half year and mineralogy and metallurgy for a half year.

At *Wellesley College* geology is taught during the first semester by Prof. William H. Niles, and mineralogy and lithology during the second semester by Miss Sarah Y. de Normandie. The first course is divided into three parts. The first part considers such dynamic agents as streams, glaciers, volcanoes, etc. The second part considers stratification, folding, mineral veins, etc. The third part closes with a general survey of the physical history of the earth and its past inhabitants as revealed in the rocks. Instruction is by means of lectures, text-book, readings, and recitations.

MICHIGAN.

Geology is taught in 11 colleges and universities in Michigan. It occupies a prominent place in the curriculum at the *University of Michigan* and at the *Michigan Mining School*.

University of Michigan, Ann Arbor, Mich.—Israel C. Russell, professor of geology; William H. Pettee, professor of mineralogy, economic geology, and mining engineering. Geology was first taught in the *University of Michigan* in 1841 by Douglas Houghton, who was appointed professor of chemistry, mineralogy, and geology in 1839, but there were no students at the university until 1841. The well-known Dr. Alex. Winchell was professor of geology for many years. His successor was I. C. Russell, the present incumbent.

The department has accumulated a large quantity of illustrative material during its more than fifty years of existence. The number of specimens, estimated at 100,000, are valued at \$30,000, with \$1,000 worth of instruments, maps, etc. The mineralogical collections include the Lederer collection of 2,500 European specimens, along with a rich collection of Michigan minerals. In geology there are extensive collections made by the State geological surveys, along with others obtained by purchase and donation. The White collection contains 6,000 specimens, the Reminger 25,000 specimens. The well-equipped geological laboratory is located in the natural history museum along with zoology.

Professor Russell offers three courses in geology, each continuing through the year. One year is given to the elements of geology, one to paleontology, and one in

¹Since the above went to press, Mr. Fuller has resigned to accept a position at Drury College, Missouri.

physical and historical geology. Professor Pettee gives instruction in (1) *economic geology* for one semester, in which particular attention is paid to the *geology of mines and mineral districts*, and to the modes of occurrence and distribution of minerals of commercial importance; (2) *geology of the United States*, one semester; (3) *mineralogy and lithology*, one year.

Michigan Mining School.—M. E. Wadsworth, professor; A. E. Seaman, instructor. Geology was first taught in the Michigan Mining School in 1886 by Albert Williams, jr., who remained but one year, since which time it has been under the charge of M. E. Wadsworth, director of the school. Botany and zoology are taught in the same department. The following courses of instruction are offered: (1) *Paleontology*, 32 hours, elementary course; (2) *crystallography*, 60 hours, study and determination of crystal forms. The laboratory is supplied with 151 glass models, 2,153 wood and plaster models, and 1,800 natural crystals; (3) *mineralogy*, 108 hours; more than 27,000 specimens are available in this work; (4) *petrography*, two terms, 6 hours per week, divided into microscopic mineralogy, lithology, and petrology; in this work there are 3,000 to 4,000 thin sections and more than 11,000 rock specimens; (5) *stratigraphical geology*, one term, 5 hours per week; (6) *physical geology*, one term of 2 hours and one term of 3 hours per week; (7) *economic geology*, two terms, 5 hours per week; (8) *field work in geology*, 6 weeks, 45 hours per week.

A new building is in process of erection at *Alma College*, part of which will be given to the geological collections.

MINNESOTA.

Geology is taught in 5 colleges in Minnesota, but in only 1 does it form a separate department.

University of Minnesota.—C. W. Hall, professor of geology and mineralogy; F. W. Sardeson, instructor in geology; C. P. Berkey, instructor in mineralogy. The geological laboratories occupy rooms on the first floor and basement of Pillsbury Hall. The collections are being rapidly increased by the material brought in during the field work carried on by the department, and the system of exchanges is adding material from distant localities. There are the following study collections: (1) A series of crystals; (2) a collection of native elements and sulphides; (3) a general collection of the more common minerals; (4) a representative collection of the elastic and crystalline rocks; (5) a collection of Paleozoic fossils. The department is also well equipped in instruments for the study of physical mineralogy and lithology.

There are three terms offered in mineralogy and three in general geology, the latter including physiographic, structural, dynamic, stratigraphic, and historical geology and paleontology, two terms in petrology, and one in applied geology. There are also 4 graduate courses including: (1) The granite rocks of central Minnesota; (2) the pre-Cambrian eruptives of northern Minnesota; (3) basic intrusives and their contact phenomena; (4) the lower Paleozoic of southeastern Minnesota. In 1893-94 there were 8 graduate students, 2 taking geology as a major, 6 as a minor, and 1 mineralogy as a major study.

At *Carleton College, Northfield*, geology is taught for one term by L. W. Chaney, professor of biology and geology. The museum is especially interesting as being the receptacle of the Hovey Cave Cabinet, which represents nearly twenty years collecting by the great cave explorer, Horace C. Hovey. There are also fine collections of minerals, corals, shells, and other materials, including 1,500 illustrative rock specimens, numerous fossils, and miscellaneous materials.

Geology was taught two terms at *St. Paul College, St. Paul Park*, in 1891-92, by Prof. A. C. Bothe, now of the University of the Pacific. There is no teacher of geology at present.

Geology is taught one term each in *Hamline University, St. Paul*, and *Gustavus Adolphus College, St. Peter*, and *Macalester College, St. Paul*.

MISSISSIPPI.

Geology is taught in Mississippi in 4 institutions, but in none is it a separate department.

In the *University of Mississippi* the subject receives much attention. It was first taught in 1854 by Lewis Harper. Eugeno W. Hilgard, State geologist, gave instruction in geology from 1859 to 1873, except during the four years of the war, and the course was one of the leading ones in the institution. The collections were made largely by him, and are representative of the geology of Mississippi and the adjoining States. T. O. Mabry, the present instructor, teaches mineralogy one term and geology one term.

Millsaps College, Jackson, recently established, offers two terms in geology, and *Mississippi Agricultural and Mechanical College* one and a half terms. *Rust University, Holly Springs*, gives two terms to geology, using Le Conte's Elements as a text, and one term to mineralogy.

MISSOURI.

In Missouri nearly all the colleges teach geology, 19 in all, but in only 1, the State University, does it form a special department.

University of the State of Missouri, Columbia.—G. C. Broadhead, professor of geology and mineralogy. Geology was first taught here in 1843 by E. H. Leffingwell, which is the first mention of geology in the State, most of the other colleges being of more recent date. Previous to 1871 geology was combined with chemistry and physics. From 1871 to 1883, geology, mineralogy, zoology, and botany were combined. The first field and laboratory work done by students was in 1884. The first mineralogical laboratory was in 1886. In 1892 G. C. Broadhead, the present professor, introduced paleontology. W. W. Clendenin, assistant professor of geology and mineralogy, resigned in 1893.

A destructive fire in 1892 destroyed most of the valuable collections, about 1,000 specimens only being saved from the fire. Others have since been purchased. Instruments are at hand for field work and laboratory study in mineralogy and petrography. They have a new building for geology and biology, valued at \$50,000.

The following required and elective courses are offered: (1) Mineralogy, descriptive and determinative, one year; (2) elementary geology, lectures, recitations, and field work, one semester; (3) historical geology and paleontology, one year; (4) crystallography, one semester; (5) American archaeology, includes discussions of mounds and mound builders and prehistoric American races; (6) meteorology and physiographic geology; (7) geological seminary lectures, theses, reviews, discussion, etc., once a week.

In 1893-94 there were 3 graduate students taking geology as a major study and 1 as a minor.

At the *School of Mines of the University of Missouri, Rolla*, instruction is given in mineralogy for two terms, in lithology for one term, and one term each in dynamical, historical, and economic geology.

At *Washington University, St. Louis*, the following courses are offered: (1) A half course in crystallography; (2) mineralogy; (3) a half course in mineralogy and geology; (4) elementary and systematic geology; (5) lithology; (6) economic geology; (7) paleontology; (8) petrography. Instruction is given by Gustav Hambach, adjunct professor of geology. The subject was first taught, in 1871, by William B. Potter. The school of engineering of the University, including geology and mineralogy, will soon move to new grounds.

Central College, Fayette, is just finishing a new science building, in which geology will have enlarged room and facilities.

William Jewell College, Liberty, contemplates a new science building soon, with an additional instructor in science.

At *Drury College, Springfield*, the chair of geology is specially endowed. Instruction was first given in 1875 by Oliver Brown; at present by Edward M. Shepard. The museum is said to be one of the best west of the Mississippi. The mineralogical collection contains the fine Dr. Flanner cabinet of Lake Superior copper ores, and special sets illustrating the physical properties of minerals, with material for laboratory and class-room use. The paleontology cabinet is especially rich in Missouri forms. The lithological cabinet contains most of the common rocks. Mineralogy is taught for one term and geology for two.

MONTANA.

Geology is taught in the only two colleges in Montana, but does not form a special department in either. The *College of Montana, Deer Lodge*, was established in 1884. The *Montana College of Agriculture and Mechanic Arts, Bozeman*, just established, has geology in the course, but it has not yet been taught.

NEBRASKA.

Geology is taught in 8 colleges and universities in Nebraska, but is a separate department in only 1.

The *University of Nebraska, Lincoln*, is well equipped for instruction in geology. The subject was first taught in 1871 by Samuel Anghly; instruction is given at present by Erwin H. Barbour, professor of geology and State geologist. The following courses are offered: (1) Elementary geology, one year; (2) paleontology, one year; (3) advanced geology, one semester; (4) lithology and (5) mineralogy, each one semester. The building for geology is valued at \$2,500 to \$3,000, and the collection at \$2,000. While there are no regular graduate students in geology, 4 students are doing graduate work at such times as they can, which is classed as irregular graduate work.

Geology is offered for four terms at the *University of Omaha, Bellevue*, but no particulars are at hand.

Geology was taught for one term at *York College* in 1893, but there is no class in the subject in 1894-95.

NEVADA.

The *University of Nevada, Reno*, offers two courses in geology—one in general geology, sixteen weeks, and one in economic geology, twelve weeks. W. McN. Miller, the present instructor, began teaching the subject there in 1888.

NEW HAMPSHIRE.

In New Hampshire geology is taught at *Dartmouth College* and the *New Hampshire College of Agriculture and Mechanic Arts*. In the latter it is of minor importance and is taught for only one term.

At Dartmouth College the following courses are offered by Charles H. Hitchcock, professor of geology and mineralogy: (1) Mineralogy, two terms, recitations, lectures, and laboratory work (Dana's *Manual of Mineralogy and Petrography*, Williams's *Text-Book of Crystallography*); (2) three terms in general geology, the first term physical geology, the second term historical geology, the third surface geology; there is a shorter course (3), which gives more briefly the substance of that given in the first two terms above; (4) one term in petrography, and (5) one term in mineral resources of the United States and (6) one term in physical geology. The museum of geology and biology is in Culver Hall, and is well equipped in illustrative material. It contains, among others, the Frederick Hall collection of minerals and rocks—a special collection of the rocks of New Hampshire and Vermont gathered under the auspices of the geological survey of New Hampshire, collection of economic geology, topographic models, etc. The college has recently received a bequest of \$60,000 for the purpose of founding and maintaining a chair in paleontology, archaeology, ethnology, and kindred subjects.

NEW JERSEY.

Geology is taught in two colleges in New Jersey, in both of which it occupies a prominent place in the curriculum.

In the *College of New Jersey, Princeton*, geology was first taught by the famous scientist, Joseph Henry, about 1845. The department is at present in charge of William B. Scott, Blair professor of geology, who has several assistants. The college is well equipped with illustrative material. The museum occupies the central and eastern wings of Nassau Hall and is divided into three general departments: (1) Geology (including mineralogy); (2) paleontology, and (3) archaeology. In the first department a special room contains a unique collection of more than 5,000 specimens of erratic boulders and drift material from Switzerland. There is a special room devoted to the typical rocks and fossils of the State of New Jersey. There is also a collection of the typical rocks of the State of New York. There is a collection of 2,600 specimens, chiefly crystals, bequeathed by the late A. McMartin, of New York. The paleontology department is especially rich in vertebrate forms from Europe and America. Many of these have been secured by the exploring expeditions, eleven in all, which have been sent by the college to the Tertiary regions of the Western States. The first of these went in 1877. The number of fossils, not counting duplicates, is 15,000.

The following courses are offered: (1) Elementary geology, one term; (2) physical geology, two terms; (3) historical geology, two terms; (4) physical geography, two terms; (5) mineralogy, two terms. The first three are by Professor Scott, the fourth by Professor Libbey, the fifth by Professor Cornwall and Mr. Phillips. The special development at Princeton has been in the lines of stratigraphical geology and vertebrate paleontology.

At *Rutgers College, New Brunswick*, geology was first taught by Lewis C. Beck about 1830, and at Rutgers Scientific School, established as part of the college in 1865, it was first taught by Prof. George H. Cook, for many years State geologist of New Jersey. The subject is now taught in both institutions by Albert H. Chester, professor of chemistry and mineralogy, who gives instruction in mineralogy and geology for one year. The lectures in mineralogy are illustrated both by the college collections and the private collections of the professor in charge, the latter numbering 4,000 specimens and the college collections 11,500 specimens, which are valued at \$20,000. These are stored in Geological Hall, erected in 1871 at a cost of \$50,000.

NEW MEXICO.

Geology is taught for two terms in the *New Mexico College of Agriculture and Mechanic Arts, Mesilla Park*, by E. O. Wooton, professor of botany. The equipment is meager, the subject being first taught in 1891-92.

At the *New Mexico School of Mines, Socorro*, opened in September, 1893, geology and mineralogy are in the list of courses contemplated after the first year.

NEW YORK.

Geology occupies a prominent place in the curriculum in many of the New York colleges. The subject is taught in 22 colleges and universities, and is a separate department in 9 of them; 2, Syracuse and St. Lawrence universities, forming separate departments this year (1895).

Cornell University, Ithaca.—A. C. Gill, assistant professor of mineralogy and petrography; Gilbert D. Harris, assistant professor of paleontology; Ralph S. Tarr, dynamical geology and physical geography. Geology was first taught at Cornell University in 1868 by C. Fred Hartt. After the departure of H. S. Williams, who was for many years professor of geology, no full professor was appointed, but three assistant professors (as noted above), each independent in his own subdepartment.

The museum and laboratory collections are arranged in McGraw Hall. In mineralogy and petrography the laboratory is well fitted up with microscopes, thin sections, etc., and has in charge the Silliman series of minerals (cost, \$6,000). In paleontology there is the Jewett collection of Paleozoic invertebrates, which is valued at \$20,000; the Rust collection of Trenton trilobites (cost, \$1,000), and the Newcomb collection of recent shells (cost, \$10,000). The dynamical and physical laboratory is equipped with illustrative collections, maps, photographs, etc.

There is one fellowship in geology worth \$500 and one graduate scholarship worth \$400.

The following courses are offered:¹

A. Required.—(1) Mineralogy, one term; (2) general geology, one term; (3) economic geology, one term; (4) lithology, one term.

B. Elective.—(5) Physical geography, 2 hours weekly, one year; (6) general geology, 2 hours, one year, more in detail than course 2; (7) laboratory, 1 hour a week for one year; (8) glacial geology, 3 hours per week, one term; (9) geological investigation, 2 hours per week, one year; (10) mineralogy, two terms, and crystallography one term, 3 hours; (11) petrography, two terms or more; (12) paleontology, with field work, museum methods, laboratory work, and palaeontological drawing; (13) invertebrate paleontology.

About 33 per cent of the students eligible to elect geology did so in 1893-94. There were 2 graduate students taking geology as a major and 6 as a minor. In 1894-95 there are in—

(a) Mineralogy and petrography (partly elective):	
Undergraduates	62
Graduates	5
(b) Physical and dynamical geology (partly elective):	
Undergraduates	75
Graduates	2
(c) Paleontology (wholly elective):	
Undergraduates	8
Graduates	3

*Columbia College, New York.*²—Science has always had a prominent place at Columbia. The college was founded in 1754, and for three years President Samuel Johnson comprised the entire faculty. The first professor to be appointed was Daniel Treadwell (1757), with the title professor of mathematics and natural history. The eleventh chair to be established received the title of geography (1784), and it was held for one year by John D. Gross and then for five years by John Kemp, after which it lapsed. For the next seventy years such work as was at all related to geology was done under the comprehensive name of natural history. Geological interest was active in the Lyceum of Natural History, now the New York Academy of Sciences, which was founded in 1818, and the first president of the lyceum was Samuel L. Mitchill, who had held the chair of natural history in the college, and who has left not a few papers in paleontology and geology.

The subject received its chief impetus when the present school of mines was founded in 1864. For the next two years Dr. Charles F. Chandler gave the geological instruction, in addition to his chief duties in the chemical department. In 1866 a chair of geology and paleontology was established, and to it Dr. John S. Newberry was called from the Smithsonian Institution. With the advent of Dr. Newberry the department at once became a prominent feature of the university. His reputation was already established by reports on the geology of the Western Territories, and his appointment as State geologist of Ohio in 1869 gave him a rich field in which to work and in which to train others. Dr. Newberry began the collections which before his death reached nearly 100,000 specimens, and which are especially well adapted to

¹ 1894-95. After the appointment of Professors Harris and Gill.

² Contributed by J. F. Kemp, professor of geology at Columbia.

teaching. The following names of assistants to Dr. Newberry are found on the rolls: George S. Baxter, 1868-69; William B. Potter, 1869-1871; Henry Newton, 1870-1875; I. C. Russell, 1875-1877; William A. Hooker, 1877-78; Spencer B. Newberry, 1878-79; Nathaniel L. Britton, 1879-1886. Later than this the position of assistant was resolved into two so-called fellowships, which were held by F. J. H. Merrill, John I. Northrop, and Arthur Hollick for varying terms. In December, 1890, Dr. Newberry became incapacitated, and the remainder of the year the departmental work was done by Arthur Hollick and by H. S. Munroe, the professor of mining.

In June, 1891, J. F. Kemp was made adjunct professor, and in June, 1892, received the appointment to the full chair. Dr. Newberry passed away in December, 1892. The present staff contains, in addition, Arthur Hollick, with the title of tutor, and Gilbert Van Ingen, curator. In 1893 G. K. Gilbert was lecturer in geology. Besides the usual work in general geology, Professor Kemp gives university courses in economic geology and petrography; Dr. Hollick offers extended work in paleobotany, and Mr. Van Ingen does the same in invertebrate paleontology. In the department of biology Prof. H. F. Osborn offers university courses in vertebrate paleontology, and the work is done at the American Museum of Natural History, where, in addition to the former rich material of the museum, there is now the Cope collection; recently acquired by purchase. Professor Osborn is also curator of this department at the museum. Dr. Bashford, dean of the department of biology, offers work on fossil fish, running through the year. Both these latter courses are in close association with the geological department. Mineralogy is a separate department at Columbia, and is manned at present by Prof. Thos. Egleston (mineralogy and metallurgy), Adjunct Prof. A. J. Moses, Tutor L. McL. Luquer, and Assistant Heinrich Ries.

Nine courses are offered in general geology, paleontology, and petrography, all but one extending through the year. Two courses in general geology are collegiate courses in Columbia College, the others are university courses.

The geological department possesses well-rounded equipment for general instruction, but it is especially rich in fossil plants, in fossil fish, and in economic geology. It is also fortunate in having access to the collections at the American Museum, where Hall's types and many thousands of other invertebrates are under the care of Prof. R. P. Whitfield. The approaching removal to a new and enlarged site (1897) offers encouraging opportunities for growth, and when the great drains upon the endowment, made by the unavoidably heavy expenses attendant on this, have been met it is expected that the geological force will be still further increased.

At the *University of Rochester*, Rochester, geology was first taught at the organization of the university in 1850 by Chester Dewey, and is taught at present by Herman LeRoy Fairchild, professor of geology. The department occupies the whole upper floor of Sibley Hall, valued at \$100,000, the library occupying the lower floor. The museum includes the Ward collections in mineralogy, petrography, paleontology, and phenomenal geology, consisting of the original collections of Professor Ward. The collection was purchased by the university in 1862 for \$20,000. It was at that time the largest and choicest geological collection in America. Students accompanied by an instructor also have access to the extensive collections of Ward's Natural Science Establishment.

One term's work is offered in mineralogy and petrography, two terms in general geology. There is given in one term a more general course in elementary geology for those who do not take the preceding courses. The following special courses are offered to advanced students who are prepared to take them: (1) Advanced petrography; (2) advanced geology; (3) paleontology; (4) economic geology; (5) physiography; (6) meteorology. There is also a list of honor studies in geology, which includes a critical study of certain standard monographs.

At *Union College*, *Schenectady*, geology was first taught in 1845 by Jonathan Pearson. For a number of years instruction has been given in geology and biology by Prof. James H. Stoller, but in 1894 geology was made a separate department, with Charles S. Prosser as acting professor. The following courses are offered: (1) Miner-

alogy and lithology; (2) general geology; (3) economic geology; (4) historical geology (advanced course); (5) field geology; (6) areal geology; (7) advanced field work and independent research; (8) paleontology, with particular attention to the Paleozoic faunas.

Particular stress is laid on the stratigraphy and paleontology of the Paleozoic formations of New York, for which Union University is admirably situated, being within easy access of the large collections at Albany and in the very midst of this classic geologic area, so that in one or two days any type locality of the New York series may be visited. Professor Prosser is well equipped for this work, having been associated with Dr. H. S. Williams, at Cornell University, for seven years, and four years on the United States survey. Since the removal of Dr. Williams to Yale and the death of Dr. Newberry, Professor Prosser is the first to offer special courses on New York geology. Both graduate and undergraduate instruction will be given.

The museum is well equipped with specimens given as follows: Paleozoic fossils, 870; Mesozoic, 300; Cenezoic, 200; lithological specimens, 1,010; general mineral collection, 4,000; total, 7,380. The zoological collections contain 15,000 specimens.

At *Hamilton College, Clinton*, geology was first taught in 1819 by Oren Root. At present it is taught by Charles H. Smyth, professor of geology and mineralogy. The department is located in the Knox Hall of Natural History and has extensive illustrative collections, including 2,500 fossils and rocks illustrating the geology of New York and 1,750 illustrating the geology of the United States, 600 Silurian fossils from Europe, and 10,000 specimens of ores and minerals.

Three terms' work are offered in general geology and additional courses are elective in economic geology and petrography. A course of lectures is given also in physiography, and special research work on local geology may be taken. Mineralogy and crystallography are elective.

The first instructor in geology at the *University of the City of New York* was John William Draper, who began some time prior to 1859. The subject is taught at present by John James Stevenson, professor of geology. Since the removal of the university to its new site at University Heights, in 1894, the department is located in two temporary buildings. A special building for geology and biology is in contemplation.

The following courses are offered: (1) Physical geography, one term two hours per week; (2) general geology, one term two hours, one term one hour per week; (3) laboratory course, one term two hours; (4) economic geology, two terms three hours; (5) determinative mineralogy, two terms two hours; (6) Anthropology, two terms one hour.

Geology was first taught at *St. Lawrence University, Canton*, in 1871 by Prof. James Henry Chapin. Professor Chapin died in 1892, and in July, 1894, his widow, Mrs. Chapin, announced her intention of founding the Chapin professorship of geology and mineralogy. The department will soon be created.

At *Hobart College, Geneva*, geology was first taught by Horace Webster in 1825-26, who was afterwards president of the College of the City of New York. Instruction is given at present, provisionally, by Prof. H. L. Smith. The museum collections are reported to be extensive.

In 1847 geology was added to the curriculum at *Colgate University*, but no instructor was named. In 1860 William Mather was named as lecturer on chemistry and geology, but at the same time geology disappears from the curriculum. The existence of a real department dates from 1868, when Albert S. Bickmore was appointed professor of natural history. In 1874 Walter R. Brooks was appointed lecturer on natural history. Upon his death, in 1888, Aaron H. Cole was elected and continued until 1892, since which time Albert P. Brigham, professor of geology and natural history, has been in charge.

Six courses are now offered in geology, three are devoted to general geology, the others to paleontology and research work in historical geology. There are two

courses in mineralogy. The university is admirably situated for study of the type series of Paleozoic formations. It is here that the Harvard University summer school does part of its field work.

The collections are extensive and are divided into the historical, dynamical, lithological, and economic; the latter includes a great quantity of material from the World's Fair. The laboratory is supplied with maps, models, photographs, and lithological lathe.

A separate department of geology has just been created at *Syracuse University*, with E. C. Quereau, from the University of Chicago, in charge; the courses have not been announced. The subject was first taught at Syracuse in 1872 by Dr. Alexander Winchell, late of Ann Arbor.

Rensselaer Polytechnic Institute, Troy, has had geology since 1825, when it was first taught by Amos Eaton. The last instructor was Henry B. Nason, professor of chemistry and natural science, who died January 18, 1895.

At the *United States Military Academy, West Point*, geology was first taught in 1835, the first professor of geology, W. F. Hopkins, being appointed in 1838. The present professor is S. E. Tillman. Mineralogy has been taught since 1820.

At *Vassar College, Poughkeepsie*, geology and mineralogy are taught by William B. Dwight. Mineralogy has two courses, one an abridged course. In geology there is first a brief course in physiographic geology, followed by a course in lithological geology; the principles of petrography are here introduced, use is made of the microscope, and microscopic sections are prepared. Dynamical geology is next taken up, followed by paleontology and historical geology. Advanced courses may be elected in petrology, paleontology, stratigraphical or dynamical geology. The mineralogical and geological laboratories are well equipped with instruments. The cabinets contain more than 10,000 specimens, besides models, sections, relief maps, etc. There is among others a valuable collection of the remarkable vertebrate fossils of Tertiary age from the Bad Lands of Nebraska.

The other colleges in the State in which geology is taught are enumerated in the accompanying tables.

NORTH CAROLINA.

In North Carolina geology is taught in 8 colleges and universities, but in only 1, the *University of North Carolina*, does it form a separate department or have any prominence in the curriculum. In the others it is taught for one term, with an additional term of mineralogy in some of them.

At the *University of North Carolina, Chapel Hill*, geology was first taught in 1817 by Denison Olmstead. It has been a separate department since July, 1892, with Collier Cobb professor of geology at present. Four years' work are now offered in the subject, but no particulars are at hand concerning the courses. The department occupies a building with the State geological survey offices and biology. The department of geology occupies the first floor with two laboratories, a lecture room, cabinet, and library. The subject is elective, and in 1893-94 about 45 per cent of the students elected it. There were 3 graduate students the same year, 1 taking the subject as a major and 2 as a minor.

At *Davidson College, Davidson*, geology was first taught in 1857 by W. H. Kerr, afterwards State geologist. At present Prof. Henry Louis Smith teaches mineralogy four months and geology the remaining six months of the year. There is an extensive collection of 10,000 or 11,000 specimens.

NORTH DAKOTA.

In North Dakota geology is taught in 3 colleges, but forms a prominent feature in none of them.

OHIO.

In Ohio geology is taught in 30 colleges and universities. While it forms a separate department in only 2, it forms a prominent feature in several others. In 9 different institutions the subject is taught for three terms or more.

At *Ohio State University, Columbus*, Prof. Edward Orton, State geologist, has taught geology since 1875. He was the first instructor. Miss Florence Bascom is at present assistant.¹ The department is well equipped for work. It is in a building valued at \$105,000. The large collection in the museum has been arranged for instruction rather than display. It embraces the following series: (1) representatives of the different formations of the State and the leading phases of each formation; (2) a collection of the Ohio fossils, which includes a large majority of the described fossils and many type specimens, particularly rich in Upper Silurian and Devonian forms and plants of the coal period; (3) the collection of economic minerals of the State; (4) the petrographical collections, which include the Hawes collection, the Krantz collection, and the Rosenbusch complete series of typical rock specimens from abroad. These are supplemented by two series of thin sections, including Voigt and Hochgesang's collections. There are also many other specimens on general geology and mineralogy, many geological models and maps.

The following courses are offered by Professor Orton: (1) General geology, lectures, two terms; (2) economic geology, one term; (3) dynamical and structural geology, one term; (4) paleontology, no limit. The following by Miss Bascom: (1) Physical geography, one term; (2) elementary geology, one term; (3) petrography, two years; mineralogy is taught for three terms by N. W. Lord, professor of mining and metallurgy.

Of the students eligible to elect geology in 1893-94, 37 per cent elected it. There were two graduate students taking geology as a major the same year.

At the *Western Reserve University, Cleveland*, geology was first taught in 1839, by Prof. Samuel St. John, who taught it for one term in the course. At present (1894) it is a separate department taught by Henry P. Cushing, associate professor of geology. Within two years a new building for biology and geology is to be erected. The specimens in the cabinets, numbering 12,000, are estimated to be worth \$6,000, and the instruments, etc., estimated at \$2,000.

The following courses were given in 1893-94, each a half year in length: (1) A general course in geology; (2) crystallography and descriptive mineralogy; (3) determinative mineralogy and blowpipe analysis; (4) dynamical geology and lithology; (5) structural and historical geology. Geology is an elective and of the students eligible to elect in 1893-94, 50 per cent did so.

A new building for science is in course of erection at *Buchtel College, Akron*. While geology is not a separate department at Buchtel, it is a prominent subject in the curriculum. No particulars are at hand as to the number or scope of the courses offered.

In the *Case School of Applied Science, Cleveland*, but two terms of geology were offered in 1893-94, but in the following year the course was extended somewhat. There are: (1) A course in mineralogy, (2) a course in general geology, (3) a course in advanced geology, (4) a course in physical geology. It is taught at present by Frank Mason Comstock, professor of natural history.

In *Ohio Wesleyan University, Delaware*, geology is now taught for one year by Edward T. Nelson, professor of physiology and geology. Mineralogy is taught by the department of chemistry for one term. Especial attention is given to the Paleozoic fossils of the Mississippi Valley. A portion of the last term is given to economic geology. More advanced courses are contemplated in the future. One building is now devoted to biology, physiology, and geology.

¹ Since the above went to press, Miss Bascom has accepted a position at Bryn Mawr, and J. A. Bownocker has been appointed assistant.

Lima College, Lima, is a new institution, and the first class in geology will be formed in 1895.

At *Oberlin College, Oberlin*, a natural history building is planned for geology, zoology, and botany. Geology is now combined with zoology, but a separate department of geology is contemplated.

At *Miami University, Oxford*, the department of biology and geology has been for many years in charge of zoologists, and geology has been subordinate to zoology and botany.

At *Antioch College, Yellow Springs*, both Professor Orton, State geologist, and Professor Claypole, of Buchtel College, have taught geology at different times. It is not certain whether the subject was first taught by Professor Chandler or by Professor Claypole. The subject is now taught for three terms by Prof. G. A. Hubbell, and it is expected to add an additional elective term. One term is devoted to economic geology, and two to general and local geology. The museum collections are large.

OKLAHOMA.

Geology will be taught the coming year (1894-5) at the two new institutions in Oklahoma. Neither one is yet old enough to have a class sufficiently advanced to study the subject this year. The *University of Oklahoma, Norman*, contemplates a geological survey under the charge of the professor of geology at the university.

OREGON.

In Oregon geology is taught in 8 colleges and universities, but at present forms a separate department in none of them.

At the *University of Oregon, Eugene*, geology has been taught since 1877 by Thomas Condon, the present instructor. There is this year one course extending through the three terms; next year (1894-95) another advanced course will be given extending through the year, making six terms in all. A separate department of geology is contemplated in the near future. There are large collections in the cabinet, valued at \$10,000.

At the *Oregon State Agricultural College, Corvallis*, geology is at present combined with physics. Next year (1894-95) it is expected to make geology and mineralogy a separate department.

PENNSYLVANIA.

In Pennsylvania geology is taught in 24 different institutions, but in none of them does it form a separate department except the Boys' Central High School at Philadelphia. In several colleges and universities mentioned below it forms a prominent place in the curriculum.

University of Pennsylvania, Philadelphia.—Geology was first taught in the University of Pennsylvania in 1835 by the well-known geologist, Henry D. Rogers. Mineralogy was made a separate course in 1816, with Thomas Cooper as professor. At present instruction is given by Amos P. Brown, instructor in mining and metallurgy. Edward D. Cope, professor of mineralogy and geology, gives a course of lectures on the anatomy of the vertebrates. Besides the courses in mining and metallurgy, Dr. Brown offers five courses in mineralogy and two in geology, one on lithology and one on stratigraphy. In 1893-94 there were 9 graduate students taking geology as a minor study, and 12 in 1894-95. There were none taking it as a major.

There has been some talk of a separate building for geology and mineralogy including a museum. The museum collections are quite large, estimated at 20,000 specimens, including 6,000 minerals, all valued at \$15,000.

In the *Boys' Central High School, Philadelphia*, geology and mineralogy has been taught by Oscar C. S. Carter, professor of geology and mineralogy, since 1889 (†). There is a large granite building now in course of erection (1894), in which there will be a separate mineralogical and geological laboratory. Dana's Manual of

Mineralogy and Le Conte's Compend of Geology are used. Special attention is paid to the local geology and frequent excursions made to the numerous mineral and rock quarries; photographic views are taken and the students are encouraged to make collections of their own.

At *Lehigh University, South Bethlehem*, a course of lectures is given for one term in general geology in connection with Le Conte's text-book. One term is given to lithology based on Williams's Lithology. Mineralogy is taught for one year; the first term devoted to crystallography and determination of crystal forms; the second term to physical properties and descriptive mineralogy. The geological cabinet contains more than 10,000 specimens. In paleontology there are good specimens of nearly all the common genera. In mineralogy are the Keim and Roepper collections, the latter valuable from a crystallographic standpoint. The petrographic division contains a duplicate set from the collection of the second geological survey of the State besides many foreign specimens. There is a valuable economic collection. Instruction is given by Edward H. Williams, jr., professor of mining engineering and geology.

At *Lafayette College, Easton*, instruction in geology is given by Thomas C. Porter, professor of botany and mining engineering. There are 30 exercises in general geology, 30 in economic geology, and 56 in mineralogy. There is a rock-cutting machine and a microscope for petrographic work.

At *Pennsylvania State College, State College*, geology was taught for a number of years by William A. Buckhout, professor of botany and horticulture, instruction being given for two terms annually. Mineralogy was taught by the chemistry department. In 1893 a school of mining engineering was established, with Magnus C. Ihlseng professor of mining engineering and geology. T. C. Hopkins was appointed instructor in geology for one term. He left in January, 1894, returning in January, 1896, as assistant professor of geology, Professor Ihlseng giving instruction in geology in the interval. General geology is taught for one term, economic geology one term, and mineralogy two terms. Additional courses in geology are contemplated. Field and laboratory work is carried on in connection with recitations and lectures.

At present instruction is given in the new engineering building. A separate building for the mining engineering department, including geology and mineralogy, is contemplated. There is a fine collection of minerals and several valuable rock collections, including several European collections, duplicates from the second geological survey of the State, many specimens from the first survey, and the fine collection from the State exhibit at the World's Fair. The geological library was separated from the general library and combined with the mining-engineering library in 1893. It already contains upward of 400 volumes, and is rapidly growing in numbers and value. The private libraries of Professors Ihlseng, Steek, and Hopkins are available to students in geology.

At *Franklin and Marshall College, Lancaster*, instruction in geology was given in 1853 by Rev. T. C. Porter. It was formerly combined with botany and zoology, but is at present taught for three terms by the president, Rev. John S. Stahr.

At *Bucknell College, Lewisburg*, geology is taught at present for one term 5 hours per week and one term 1 hour per week. A longer course will be made elective in 1895.

It will be interesting to many to know that geology was first taught about 1837 in *Allegheny College, Meadville*, by Matthew Simpson, later so famous in the ministry. It is taught at present for two terms by James H. Montgomery, professor of physics and chemistry, one term being given to dynamical and one term to historical geology. The museum contains a number of distinct collections estimated to contain 20,000 specimens in all.

At *Erasmus College, Collegerville*, geology is not taught as a separate branch, but there is one term of physiography; mineralogy is elective with chemistry and paleontology with biology.

RHODE ISLAND.

Geology is taught in two institutions in Rhode Island, being a separate department in one and having a good course in the other.

At *Rhode Island College of Agriculture and Mechanic Arts, Kingston*, geology was first taught in January, 1894, by H. J. Wheeler. The department being just started the equipment is small.

At *Brown University, Providence*, geology is combined with zoology and taught by Alpheus S. Packard, professor of zoology and geology, who teaches geology for two terms and part of a third. There are extensive collections, estimated as follows: Minerals, 10,066; fossils, 6,850; rocks, 2,808; total, 19,724. The fossil flora of Rhode Island is fully represented. The lectures are illustrated by diagrams, models, and lantern views.

SOUTH CAROLINA.

In South Carolina there are 8 institutions in which geology is taught, but in none of them is it a separate department or does it form a prominent feature, nor do any of them possess very large illustrative collections.

Clemson College contemplates adding a professor of geology and metallurgy to the faculty and giving advanced instruction in geology.

SOUTH DAKOTA.

Geology is taught in 6 colleges in South Dakota, and in 2 it is a separate department with mineralogy. In 3 colleges in the State the president teaches geology.

In *Yankton College, Yankton*, geology is taught for two terms by the president, Albert T. Free. Physiographic, lithological, historical, and dynamical geology are studied in the order named, using Le Conte as a text. In the second term special attention is paid to the geology of Dakota and the Northwest. Mineralogy is studied for one term.

At the *University of South Dakota, Vermillion*, geology was first taught about 1888 by Prof. Gary E. Culver. At present it is taught by James E. Todd, professor of geology and mineralogy, and State geologist. Seven different courses are offered in geology, as follows: (1) Dynamical geology, (2) petrography, (3) structural and historical geology, (4) economic geology, (5) field geology, (6) special geology, (7) paleontology. Four terms are offered in mineralogy, including crystallography, determinative, descriptive, and microscopic mineralogy.

A fire in 1893 destroyed part of the library and collections, but they are now being added to rapidly. The laboratory is supplied with a microscope, section-cutting machine, and many thin sections. There is a large quantity of economic material, obtained from the World's Fair. Collections are accumulating under the direction of the State geologist, who is also the professor of geology.

At the *South Dakota Agricultural College and United States Experiment Station, Brookings*, geology was taught about five years ago for three years and then dropped; recently a term in agricultural geology has been added which treats of soils, drainage, etc.

TENNESSEE.

In Tennessee geology is taught in 19 colleges and universities. It forms a separate department in none of them and in most of them is of minor importance in the course. Yet in a few of them it forms a prominent feature.

The geology of Tennessee is now a required study in the common schools of the State, taught from a text-book specially prepared, and in many of the colleges a course is given on the geology of the State.

In *Vanderbilt University, Nashville*, geology is taught by James M. Safford, professor of natural history and geology, formerly State geologist, and Paul M. Jones, fellow

and assistant. Mineralogy, including crystallography, is taught for one term, general geology one term, and applied geology two terms.

Natural history and geology occupy one story in Science Hall, where the museum, laboratory, and lecture rooms are located. Instruction is given by lectures, recitations, and laboratory and field work.

At *Cumberland University, Lebanon*, a new university building is in process of erection in which the geological collections, laboratory and lecture room will be placed.

At *Maryville College, Maryville*, a new science building is contemplated and an enlargement of the course in geology. The subject is taught at present for two terms, one in general geology and one in the geology of Tennessee.

At the *University of Tennessee, Knoxville*, geology is temporarily attached to the school of agriculture. Instruction is given in mineralogy, general geology, and the geology of Tennessee.

At *Burritt College, Spencer*, instruction is given now for one term, but it is expected soon to add another.

They are planning to develop the subject of geology more extensively at *Washington College* in the near future.

TEXAS.

Geology is taught in 9 institutions in Texas, but in only 1 does it form a separate department.

At the *University of Texas* geology was first taught in 1888 by Robert T. Hill, now of the United States survey. At present instruction is given by Frederic W. Simonds, professor of geology, who offers the following courses: (1) General geology, one year, including physical geography, dynamical and structural geology; (2) paleontology, two terms, for 1894-95, brachiopoda; (3) mineralogy and crystallography, one term; (4) economic geology (one third course); (5) petrography (one third course) [not given in 1894-95.]

After 1894-95 a course in mining will be offered in the school of geology.

The geological lecture room and laboratories are in the west wing of the main building, and the display and reference collections, filling 18 cases, are in a central portion of the main building.

At *Austin College, Sherman*, it is expected soon to make the subject of geology more prominent in the curriculum.

UTAH.

In April, 1894, the *University of Utah* received \$60,000 from the Salt Lake Literary and Scientific Association for the endowment of the Deseret professorship of geology. The new building and museum of the association has also been placed at the disposal of the institution. The museum is a very valuable one, estimated at \$75,000. It contains 3,000 mineral and rock specimens, 500 vertebrates, 2,000 invertebrates, and nearly 1,000 ethnological specimens. There are also about 7,500 specimens in the university museum.

The year 1894-95 is the first under the endowment. Instruction is given by James E. Talmage, president and Deseret professor of geology and mineralogy. William D. Neal's name also appears on the faculty list as instructor in geology and mineralogy. The following courses are offered: (1) Elementary mineralogy, one term; (2) advanced mineralogy, two terms; (3) elementary geology, one term; (4) advanced geology, one year. The elementary geology is required; the others are elective. The announcements for 1895-96 offer three courses in mineralogy and four in geology.

VERMONT.

While not a separate department in either of the two Vermont colleges, geology occupies a prominent place in each.

In the *University of Vermont, Burlington*, geology was first taught in 1839 by Prof. G. W. Benedict. At present general geology is taught a half year by George H.

Perkins, professor of natural history; mineralogy a half year by Horatio Loomis, professor of mineralogy and agriculture; geology, including soils, tillage, drainage, and fertilizers, by Joseph L. Hills, professor of agricultural chemistry. The museum is well equipped with illustrative material. Among the several thousand minerals and rocks of special note are the collection of sulphur and associated minerals from Sicily, lavas from Mount Vesuvius, and the native rocks and minerals. There is a large fossil collection which is not enumerated in the table at the end of this chapter. It is the intention to make geology and mineralogy a separate department.

Geology is taught at *Middlebury College* by Henry M. Seely, professor of natural history. There are no data at hand concerning the courses given. The college is making a complete collection of the rocks and fossils of the Champlain Valley.

VIRGINIA.

In Virginia geology is taught in 9 different institutions, and forms a separate department in 1, the *University of Virginia*.

Geology was first taught in the University of Virginia in 1840 by the well-known geologist, William B. Rogers. The present professor is William M. Fontaine. No particulars are at hand concerning the courses of instruction, further than the statement that both graduate and undergraduate instruction is given in geology and mineralogy. The university is admirably equipped for teaching the subject. The cost of the building and specimen cases is \$52,500; of the specimens, \$30,884; of the instruments, maps, etc., \$7,750.

At the *Virginia Agricultural and Mechanical College, Blacksburg*, while geology is in the department of chemistry, yet the instructor in geology and mineralogy, Thomas L. Watson, teaches only these branches.

WASHINGTON.

It is interesting to note that in the 4 institutions in Washington in which geology is taught, all began the subject in 1894, which seems to be the earliest date that geology was taught in the State, unless it might be in the *University of Washington, Seattle*, which was not heard from either by letter or by catalogue.

At the *Agricultural College Experiment Station and School of Science* geology is not taught, but there is a short course in mineralogy.

WEST VIRGINIA.

In West Virginia geology is taught in 3 institutions, in 1 of which it forms a separate department; in the other 2 there is but one term in each.

In the *West Virginia University, Morgantown*, geology is a separate department, under Prof. S. B. Brown. The subject was first taught in 1868 by Prof. J. J. Stevenson, now of the University of the City of New York. William M. Fontaine, now of the University of Virginia, and Israel C. White, of West Virginia, have given instruction in geology here. The following courses are now offered: (1) A course in general geology extending through the year, three hours a week; (2) mineralogy two hours a week through the year; (3) economic geology, three hours a week through the year, and (4) physical geology. In 1893-94 there were 25 students in geology; in 1894-95 there were 34. There were no graduate students.

WISCONSIN.

In Wisconsin geology is taught in 7 institutions, in 2 of which it is a separate department and in the others it is a prominent feature in the course.

University of Wisconsin, Madison.—Charles R. Van Hise, professor of geology; William H. Hobbs, assistant professor of mineralogy and petrology; J. M. Clements, assistant professor of geology. Geology was first taught at the University of Wisconsin in 1869 by Roland D. Irving. Prof. T. C. Chamberlin, now of the University of Chicago,

formerly State geologist of Wisconsin and president of the University of Wisconsin, was for many years professor of geology. Prof. Rollin D. Salisbury, now at the University of Chicago, was formerly at the University of Wisconsin. The following courses are offered by the present faculty: (1) General geology, one term, Van Hise; (2) historical geology, one term, Clements; (3) systematic paleontology, Clements; (4) field geology, one term, Van Hise and Clements; (5) applied geology, one term, Van Hise; (6) general course in mineralogy, divided into three parts: (a) general mineralogy, (b) blowpipe analysis, (c) optical mineralogy, Hobbs; (7) short course in mineralogy, Hobbs; (8) blowpipe analysis and determinative mineralogy, Hobbs; (9) petrology, two courses, Hobbs.

Advanced and graduate work is offered, the character of the work adapted to the individual students. Special facilities are offered in physical and pre-Cambrian geology by Professor Van Hise; in paleontology by Professor Clements; in petrology by Professor Hobbs. There is also a course of synoptical lectures by the three professors, given in 1893-94 and alternate years thereafter.

There were 4 graduate students taking geology as a major study in 1893-94. Of the undergraduates about 33 per cent of the class of '94 elected geology.

The college is well equipped in apparatus and illustrative materials. The geological and mineralogical museum occupies the second floor of the south wing of Science Hall. It contains many topographic relief models; a number of casts of gigantic fossil forms; the Powers collection of fossils, a systematic mineral collection of 2,500 to 3,000 specimens; the W. T. Henry collection of minerals, containing 30,000 to 40,000 specimens, especially representative of the lead and zinc ore deposits of Wisconsin; the Stürtz-Rosenbusch collection of typical European rocks, and the Julien collection of typical American rocks, etc.

At *Beloit College* geology is taught for nine terms by George L. Collic, professor of geology. No particulars are at hand concerning the courses. The department occupies two floors of Pearson's Science Hall, in which the collections are displayed.

WYOMING.

In Wyoming geology is taught for three terms in the *University of Wyoming, Laramie*, by Wilber C. Knight, professor of mining engineering and geology. Six courses are offered—five in geology and one in mineralogy: (1) General geology, five hours per week, one year; (2) mineralogy; (3) paleontology, and (4) economic geology, each sixty hours; (5) dynamic and structural geology, sixty hours; (6) field work and thesis, sixty hours. The subject was first taught in 1887 by Prof. J. D. Conley.

The *Wyoming Collegiate Institute, Big Horn*, opened in September, 1894, and will have geology in its course when a class is far enough advanced. It will be taught by H. N. Robinson, jr., along with physics and chemistry.

TABLE 1.—Statistics of colleges in which geology

Name of school.	Location.	Name of present instructor.	Where not a separate department, combined with—
1	2	3	4
ALABAMA.			
Alabama Polytechnic Institute.	Anburn	P. H. Mell	Botany
Howard College	East Lake	G. W. Macon	Botany and zoology
Southern University	Greensboro	E. L. Brown	Chemistry, physics
State Normal and Industrial School.	Normal	B. F. Darrell	Astronomy, physics
Selma University	Selma	Ruth Haldrum	Natural science
University of Alabama	University	Eugene Smith	
ARIZONA.			
University of Arizona	Tucson	T. B. Comstock	Mining
ARKANSAS.			
Onachita Baptist College	Arkadelphia	J. G. Lille	Chemistry, physics
Arkansas Cumberland College.	Clarksville	Geo. W. McGlumphy	Natural science
Hendrix College	Conway	G. H. Burr	do
Arkansas Industrial University.	Fayetteville	J. F. McNeill	Biology
Mountain Home Baptist College.	Mountain Home	S. E. Meek	Natural science
		W. S. Johnson	
CALIFORNIA.			
University of California	Berkeley	Joseph Le Conte	
Pomona College	Claremont	A. C. Lawson	
University of Pacific	College Park	A. J. Cook	Zoology
Napa College	Napa	Harold Heath	Natural science
Santa Clara College	Santa Clara	H. A. Surface	Chemistry, zoology
Leland Stanford, Jr., University.	Stanford University	A. Cichl	Chemistry, physics
University of Southern California.	University	J. C. Branner	
		J. P. Smith	
		O. P. Phillips	Natural science
COLORADO.			
University of Colorado	Boulder	F. Y. Moseley	
Colorado College	Colorado Springs	F. W. Cragin	
Presbyterian College of the Southwest.	Del Norte	J. K. Surla ¹	
College of the Sacred Heart.	Denver	J. McLane	Not stated
University of Denver	do	F. N. Gubitosi	
State Agricultural College	Fort Collins	Wm. C. Strong	Chemistry
State School of Mines	Golden	W. B. Headen	do
		H. B. Patton	
CONNECTICUT.			
Trinity College	Hartford	W. H. C. Pynchon	Biology
Wesleyan University	Middletown	W. N. Rice	
Yale University	New Haven	H. S. Williams et al.	
Storrs Agricultural College	Storrs	B. F. Koons	Zoology
DELAWARE.			
State College for Colored Students.	Dover	Wesley Webb	Agriculture, biology
Delaware College	Newark	T. R. Wolf	Chemistry
DISTRICT OF COLUMBIA.			
Columbian University	Washington	W. S. Yeates ²	
Gallaudet College	do	G. V. Chandler	
Georgetown College	do	J. W. Chickering	
Howard University	do	Jas. Dawson	Physics, mechanics
		Richard Foster	Natural history

¹ Deceased.² Now State geologist of Georgia.

is taught, length of time, equipment, etc.

By whom first taught.	Date when first taught.	Time given to—			Estimated value of—		Estimated number of—	
		General geology, mineralogy, and paleontology.	Petrography.	Economic geology.	Instruments, maps, etc.	Minerals, rocks, and fossils.	Specimens.	Volumes in library.
5	6	7	8		9	10	11	12
John Darby	1859	3 terms			\$1,000	\$500	1,000	325
.....		1 term			250	500	500	50
N. T. Lupton	1886	2 terms			200	600	1,000	150
W. H. Council	1891	1 term			5	10	125	10
E. M. Brawley	1885	do						
J. F. Wallis	1831	4 years			250	10,000	22,000	1,500
T. B. Comstock	1891	6 terms				3,000	3,500	
L. F. Salice	1887	1 term			50	50		25
G. W. McGlumphy	1891	2 terms						
I. L. Burrow	1884	do			50	400	800	30
.....		6 terms		1 term				
W. S. Johnson	1894	1 term			100			
Joseph Le Conte	1869	3 years	1 year	1 year	8 000	28,000	55,000	1,382
A. J. Cook	1894	2 terms			25	500		25
.....		3 terms						
A. E. Lasher	1883	do			200	2,000	3,000	30
A. Cichl	1891	2 terms				2,000	3,500	
J. C. Branner	1892	5 years	1 year	$\frac{1}{2}$ year	1,654			6,450
Professor Dickinson	1884	1 year						
.....				1 term				
.....		5 years	$\frac{1}{2}$ year	$\frac{1}{2}$ year				
.....	1883							
Sidney Short	1889	2 terms						
Chas. F. Davis	1880	3 terms					2,300	
Arthur Lakes	1879	2 terms		1 term	100	500	1,000	100
.....	1874	1 year		do	1,200	8,000	12,000	175
F. Hall	1826	1 term						
.....		3 years					18,300	
B. Silliman	1804							
B. F. Koons	1883	1 term				200	1,000	10
.....								
.....	1895	2 terms						
T. R. Wolf	1871	do			300	750	800	250
.....								
.....		17 terms		1 term				
L. Pratt	1868	1 term			50	100		
.....		do						
J. R. Golding	1874	2 terms			100	1,000	5,000	

TABLE 1.—Statistics of colleges in which geology

Name of school.	Location.	Name of present instructor.	Where not a separate department, combined with—
1	2	3	4
FLORIDA.			
John B. Stetson University.....	Deland	G. P. Carson	Natural and political science.
Florida Conference College.....	Leesburg	Homer Bush.....	Mathematics, natural science.
Rollins College.....	Winter Park.....	Eva J. Root.....	Natural science, French.
GEORGIA.			
University of Georgia.....	Athens	H. C. White.....	Chemistry
Atlanta University.....	Atlanta.....	Edgar H. Webster.....	Natural science.....
Georgia School of Technology.....	do	No geology at present.	
Methodist Episcopal College.....	Birmingham.....	L. Gordon.....	General science.....
Bowdon College.....	Bowdon	C. O. Stubbs.....	Philosophy, chemistry, astronomy.
Mercer University.....	Macon	J. F. Sellers.....	Physics, chemistry.....
Emory College.....	Oxford	H. S. Bradley.....	do
Clark University.....	South Atlanta.....	C. H. Turner.....	Biology, zoology.....
Young Harris College.....	Young Harris.....	Jos. W. Boyd.....	Natural science.....
IDAHO.			
University of Idaho.....	Moscow.....	C. P. Fox.....	Mineralogy, metallurgy.....
ILLINOIS.			
Hedding College.....	Abingdon.....	A. A. Waters.....	Chemistry, botany, zoology.....
Illinois Wesleyan University.....	Bloomington.....	R. O. Graham.....	Chemistry.....
Blackburn University.....	Carlinville.....	Geo. F. Weida.....	Chemistry, physics.....
Carthage College.....	Carthage	C. C. O'Harra.....	Natural science.....
University of Illinois.....	Champaign.....	C. W. Rolfe.....	
		J. G. Menier.....	
University of Chicago.....	Chicago.....	T. C. Chamberlin et al. See page 825.	
Austin College.....	Effingham.....	W. J. Brinckley.....	Natural science.....
Eureka College.....	Eureka	R. E. Conklin.....	do
Northwestern University.....	Evanston.....	Oliver Marcy.....	
		A. R. Crook.....	
Ewing College.....	Ewing.....	F. W. Nolte.....	Natural science.....
Knox College.....	Galesburg.....	Albert Hurd.....	Chemistry, zoology.....
Lombard University.....	do	F. W. Rich.....	Biology, chemistry.....
Greer College.....	Hoopeston.....	S. W. Dixon.....	Mathematics and mental science.
Lake Forest University.....	Lake Forest.....	R. A. Harper.....	Botany.....
Lincoln University.....	Lincoln	A. E. Turner.....	Chemistry.....
Monmouth College.....	Monmouth.....	S. S. Maxwell.....	Biology.....
Northwestern College.....	Naperville.....	L. Umbach.....	Natural science.....
Augustana College.....	Rock Island.....	J. A. Udden.....	do
Shurtleff College.....	Upper Alton.....	Vacant.....	
Wheaton College.....	Wheaton	J. B. Russell.....	
INDIANA.			
Indiana University.....	Bloomington.....	V. F. Marsters.....	
		J. F. Newson.....	
Wabash College.....	Crawfordsville.....	Vacant.....	Zoology.....
Concordia College.....	Fort Wayne.....	H. Duemling.....	
Franklin College.....	Franklin	D. A. Owen.....	Biology.....
Hanover College.....	Hanover	G. Culbertson.....	Astronomy, physics.....
Hartsville College.....	Hartsville.....	A. B. Barnaby.....	Natural science.....
Butler University.....	Irvington.....	H. L. Bruner.....	Biology.....
Purdue University.....	Lafayette.....	Stanley Coulter.....	Botany.....
University of Notre Dame.....	Notre Dame.....	A. U. Kirsch.....	Natural science.....
Earlham College.....	Richmond.....	J. Moore.....	
Ridgeville College.....	Ridgeville.....	G. Hindley.....	
Rose Polytechnic Institute.....	Terre Haute.....		
Taylor University.....	Upland	S. Collett.....	Natural science.....
INDIAN TERRITORY.			
Indian University.....	Bacone	C. H. Maxson.....	Natural science.....

is taught, length of time, equipment, etc.—Continued.

By whom first taught.	Date when first taught.	Time given to—			Estimated value of—		Estimated number of—	
		General geology, mineralogy, and paleontology.	Petrography.	Economic geology.	Instruments, maps, etc.	Minerals, rocks, and fossils.	Specimens.	Volumes in library.
5	6	7	8		9	10	11	12
		1 term						
T. W. Moore.....	1886	2 terms						
M. Munson.....	1889	do				\$300	700	
Jas. Jackson.....	1823	1 term			\$300	2,000	6,000	300
		do				500		
L. Gordon.....	1894	3 terms			65	35	123	18
C. A. McDaniel.....	1857	2 terms			200	300	700	50
J. E. Willet.....		1 term			200	1,500	5,000	250
		do				2,000	10,000	
		do				50	300	
May Swindall.....	1891	2 terms						
C. P. Fox.....	1893	1 term				1,000	500	10
N. C. Lewis.....	1855	2 terms				500	2,000	50
Maj. J. W. Powell.....	1865	do			60	500	1,000	80
R. B. Minton.....	1864	1 year			500	15,000	33,000	500
E. F. Bartholomew.....	1874	2 terms			100	500	1,000	200
D. C. Taft.....	1870	5 terms	1 term	1 term	1,500	30,000	23,100	900
{ T. C. Chamberlin	1892	{ 3 years or more.	{ 2 years.	do	3,000	9,000		5,000
{ et al.		{						
W. J. Brinckley.....	1892	8 terms			250	1,000	1,200	100
		1 year						
Oliver Marcy.....	1862	12 terms	2 terms	1 term	2,000	6,000	9,000	300
		1 term				500		
A. Hurd.....	1851	do				2,000	3,400	100
P. R. Kendall.....	1852	2 terms						
S. W. Dixon.....	1895	1 term			45	100	672	
R. A. Harper.....	1891	1 year				500		
J. F. Latimer.....	1870	1 term				200	500	50
J. C. Hutchinson.....	1856	do						
John Rhodes.....	1862	do					500	35
Joshua Lindahl.....	1879	3 terms			20	1,000	3000	200
		1 term						
G. F. Barker.....	1861	1 term				500	1,500	50
Professor Milligan.....	1854	2 years	5 terms	1 term	500	500	5,000	300
E. O. Hovey.....	1845	6 terms						
H. Dneming.....	1873	2 terms				300	250	
J. B. Tisdale.....	1845	1 term				9,157	35,000	
J. H. Harvey.....	1836	do						
	1865	do				100	75	
R. T. Brown.....	1859	do			100	200		400
J. Hussey.....	1876	19 weeks				3,000	20,000	100
		3 terms	1 term					
L. A. Estes.....	1854	2 terms			10,000			250
		do					200	10
		12 lectures				5,000		
		Biennially,			100	1,000	1,500	50
		2 terms.						
A. C. Bacone.....	1883		1 term					

¹ Includes cost of building.

TABLE 1.—Statistics of colleges in which geology

Name of school.	Location.	Name of present instructor.	Where not a separate department, combined with—
1	2	3	4
IOWA.			
Charles City College.....	Charles City.....	J. E. Stullken.....	History, science.....
Wartburg College.....	Clinton.....		
Amity College.....	College Springs.....	H. K. Holcomb.....	Biology, chemistry.....
Drake University.....	Des Moines.....	L. S. Ross.....	do.....
Parsons College.....	Fairfield.....	A. H. Conrad.....	Biology.....
Upper Iowa University.....	Fayette.....	Bruce Fink.....	Botany, zoology.....
Iowa College.....	Grinnell.....	H. W. Norris.....	Biology.....
Simpson College.....	Indianola.....	A. J. Jones.....	Physics.....
State University of Iowa.....	Iowa City.....	J. L. Tilton.....	Physiology, etc.....
Iowa Wesleyan University.....	Mount Pleasant.....	Samuel Calvin.....	
Cornell College.....	Mount Vernon.....		
Oskaloosa College.....	Oskaloosa.....	W. H. Norton.....	Botany, zoology.....
Central University.....	Pella.....	Mary Wood.....	Greek, science.....
University of the Northwest.....	Sioux City.....	F. E. Morgan.....	Sciences.....
Tabor College.....	Tabor.....	M. C. Boylan.....	Chemistry.....
Western College.....	Toledo.....	T. P. Hall.....	Biology, chemistry.....
Wartburg Teachers' Seminary.....	Waverly.....	A. G. Leonard.....	
		Fred Lutz.....	
KANSAS.			
Midland College.....	Atchison.....	E. B. Knerr.....	Chemistry, physics, mathematics.....
Baker University.....	Baldwin.....		
Soule College.....	Dodge City.....	S. B. Merrill.....	Botany.....
The College of Emporia.....	Emporia.....	W. H. Maurer.....	Chemistry, physics.....
State Normal School.....	do.....	D. S. Kelly.....	
Highland University.....	Highland.....	Samuel Ensminger.....	Natural science.....
Campbell University.....	Holton.....	A. D. Hoenshel.....	Botany, chemistry, physical geography.....
University of Kansas.....	Lawrence.....	S. W. Williston.....	
		E. Haworth.....	
Bethany College.....	Lindsborg.....	J. E. Welin.....	Natural history.....
Kansas State Agricultural College.....	Manhattan.....	John H. Faigler.....	Chemistry.....
Kansas Wesleyan University.....	Salina.....	Alfred W. Jones.....	Biology.....
Cooper Memorial College.....	Sterling.....	S. A. Wilson.....	
Washburn College.....	Topeka.....	G. P. Grimsley.....	Botany, zoology.....
St. John's Lutheran College.....	Winfield.....	C. M. Slease.....	Chemistry, physics.....
Southwest Kansas College.....	do.....	R. B. Dunlevy.....	
KENTUCKY.			
Berea College.....	Berea.....	A. E. Todd.....	Natural science.....
Ogden College.....	Bowling Green.....	J. C. Lewis.....	Chemistry.....
Center College of Kentucky.....	Danville.....	J. C. Falce.....	Biology.....
State Normal School for Colored Persons.....	Frankfort.....	J. S. Hathaway.....	Agriculture.....
Georgetown College.....	Georgetown.....	J. F. Eastwood.....	
Kentucky University.....	Lexington.....	Alfred Fairhurst.....	Natural science.....
Central University of Kentucky.....	Richmond.....	R. M. Parks.....	Chemistry.....
Bethel College.....	Russellville.....	James L. Lako.....	Chemistry, physics.....
St. Mary's College.....	St. Marys.....	Eugene Crane.....	Natural science.....
LOUISIANA.			
Louisiana State University.....	Baton Rouge.....	W. W. Clendenin.....	Botany.....
Keatchie Male and Female College.....	Keatchie.....	J. H. Thigpen.....	Chemistry, physics, biology.....
New Orleans University.....	New Orleans.....	L. G. Adkinson.....	Mental and moral philosophy.....
Leland University.....	do.....	George H. Felton.....	Physics.....
Tulane University.....	do.....	J. W. Caldwell.....	Chemistry.....
MAINE.			
Bowdoin College.....	Brunswick.....	L. A. Lee.....	Biology.....
Bates College.....	Lewiston.....	W. A. Hartshorn.....	Physics.....
Maine State College.....	Orono.....	F. L. Harvey.....	Natural history.....
Colby University.....	Waterville.....	William S. Bayley.....	

is taught, length of time, equipment, etc.—Continued.

By whom first taught.	Date when first taught	Time given to—			Estimated value of—		Estimated number of—	
		General geology, mineralogy, and paleontology.	Petrography.	Economic geology.	Instruments, maps, etc.	Minerals, rocks, and fossils.	Specimens.	Volumes in library.
5	6	7	8		9	10	11	12
Mr. Oldenhage.....	1871	1½ terms			\$5	\$50	150	15
Professor Lutz.....	1886	3 terms	3 terms					
N. Y. Davis.....	1879	1 term			50	500	4,500	100
		3 terms						
M. A. McAlla.....	1876	2 terms				5,000		
C. C. Parker.....	1858	1 term			50	500	2,000	150
D. S. Sheldon.....	1853	½ year			10		2,000	300
H. F. Douthart.....	1868	1 term						
T. S. Parvin.....	1864	2 years			300	10,000	30,000	1,000
		2 terms						
S. N. Fellows.....	1857	do			385	4,000	11,000	638
		1 term						
		do						
J. G. Gilchrist.....	1890	2 terms				100		
G. N. Allen.....	1866	do				350		75
	1860	1 term				200	600	50
Fred Lutz.....	1894	3 terms				150	1,181	
W. B. Glaudring.....	1887	1 term				50	500	
		3 terms					14,200	
S. B. Merrill.....	1894	2 terms						200
R. H. King.....	1885	1 term				200	500	20
		20 weeks						
		1 term						
Dr. Meninger.....	1883	2 terms			50	200	475	50
		3 years or more.	2 years.	1 term			150,000	
J. Westlund.....	1891	1 term			30	200	550	50
B. F. Mudgo.....	1865	1½ terms			1,600	3,500	4,000	
W. B. Payne.....	1889	2 terms			50	800	1,200	00
S. A. Wilson.....	1890	1 term				100	200	
Edw. F. Hobart.....	1885	3 terms		½ term	25	2,500	4,000	350
C. M. Slesse.....	1894	2 terms						
O. Phillips.....		do			25	100	300	50
		2 terms						
M. H. Crump.....	1881	do				350	800	
Luke Munsale.....	1827	5 months			95	900	1,670	310
	1892	8 months			125	50	140	30
		1 term						
P. T. Alston Cabell.....	1874	do						
		3 terms			500	800	1,000	100
Professor Lawrence.....	1856	1 term				250	1,500	
Eugene Crane.....	1890	do			50		100	
		2½ years	½ year	½ year			10,000	
G. W. Thigpen.....	1886	1 term						
		2 terms				100	500	100
		1 term						
		1 year					5,200	
Parker Cleaveland.....	1808	1 term			200		6,000	800
		do						
M. C. Fernald.....	1872	do			200	500	900	100
George W. Keely.....	1832	3 terms			700	2,500	6,750	500

TABLE 1.—Statistics of colleges in which geology

Name of school.	Location.	Name of present instructor.	Where not a separate department combined with—
1	2	3	4
MARYLAND.			
Johns Hopkins University...	Baltimore.....	{ William B. Clark..... Edwin B. Mathews.....	Other branches Astronomy Natural history
Loyola College.....	do.....	{ John J. Ryan..... Flora E. Strout.....	
Morgan College.....	do.....	{ Arthur Bibbins..... Martin P. Scott.....	
The Woman's College.....	do.....		
Maryland Agricultural College.....	College Park.....		
Rock Hill College.....	Ellicott City.....	Brother Blandin.....	Physical geography
Mount St. Mary's College.....	Mount St. Marys.....	Professor Mitchell.....	
New Windsor College.....	New Windsor.....	J. D. Matey.....	Chemistry, physics.
Western Maryland College..	Westminster.....	S. Simpson.....	Chemistry
MASSACHUSETTS.			
Amherst College.....	Amherst.....	B. K. Emerson.....	
Massachusetts Agricultural College.	do.....	Not taught now.....	
Massachusetts Institute of Technology.	Boston.....	{ Wm. H. Niles..... Wm. O. Crosby..... George H. Barton.....	Physics, chemistry
Boston College.....	do.....	{ F. de S. Fullerton..... William H. Niles.....	
Boston University.....	do.....	{ N. S. Shaler, et al. (see page 832). See Harvard.....	
Harvard University.....	Cambridge.....	{ Z. W. Kemp..... John P. Marshall..... William H. Niles.....	
		{ Sarah Y. DeNormandie T. Nelson Dale..... Position vacant.....	
Lawrence Scientific School.	do.....		
French-American College.....	Springfield.....		
Tufts College.....	Tufts College.....		
Wellesley College.....	Wellesley.....		
Williams College.....	Williamstown.....		
Worcester Polytechnic Institute.	Worcester.....		
College of the Holy Cross.....	do.....	F. A. Rousseau.....	Mechanics, astronomy
MICHIGAN.			
Adrian College.....	Adrian.....		
Albion College.....	Albion.....	C. E. Barr.....	Biology
Alma College.....	Alma.....	Charles A. Davis.....	Biology, chemistry
University of Michigan.....	Ann Arbor.....	{ Israel C. Russell..... W. H. Pettee.....	
Benzonia College.....	Benzonia.....	Vacant.....	Science
Hillsdale College.....	Hillsdale.....	W. H. Munson.....	Biology, chemistry
Hope College.....	Holland.....	J. B. Nykesk.....	English
Michigan Mining School.....	Houghton.....	{ M. E. Wadsworth..... A. E. Seaman..... James L. Kellogg.....	{ Botany, zoology Biology
Olivet College.....	Olivet.....		
Michigan State Agricultural College.	Lansing.....		
MINNESOTA.			
University of Minnesota.....	Minneapolis.....	{ C. W. Hall..... A. H. Elftman..... C. P. Berkey.....	Biology Science Biology Zoology
Carleton College.....	Northfield.....	{ L. W. Chaney, jr..... Vacant.....	
St. Paul's College.....	St. Paul Park.....	{ H. L. Osborn..... F. K. Pingry..... J. A. Edquist.....	
Hamline University.....	St. Paul.....		
Macalester College.....	do.....		
Gustavus Adolphus College..	St. Peter.....		
MISSISSIPPI.			
Mississippi Agricultural and Mechanical College.	Agricultural College.....	George C. Cruiman.....	Biology
Rut. University.....	Holly Springs.....	E. C. Walden.....	Natural science
Millsaps College.....	Jackson.....	J. P. Hanner.....	Chemistry
University of Mississippi...	University.....	T. O. Mabry.....	Natural history
MISSOURI.			
Missouri Wesleyan College...	Cameron.....	S. M. Dick.....	Philosophy
Christian University.....	Canton.....	A. J. Youngblood.....	Natural science

is taught, length of time, equipment, etc.—Continued.

By whom first taught.	Date when first taught.	Time given to—			Estimated value of—		Estimated number of—	
		General geology, mineralogy, and paleontology.	Petrography.	Economic geology.	Instruments, maps, etc.	Minerals, rocks, and fossils.	Specimens.	Volumes in library.
5	6	7	8		9	10	11	12
George H. Williams..	1883	3 years		1 year	\$5,000	\$15,000		3,500
		1 year						
Flora E. Strout.....	1895	1 term					350	
	1897	2 terms			250	600	300	20
Brother Abraham.....	1874					1,200	2,000	60
Professor Jourdan.....	1869	2 terms						
Professor Baker.....	1845	3 terms					200	50
R. L. Brockett.....	1866	1½ terms					800	
Edward Hitchcock.....	1826	4 terms			1,000	75,000	50,000	
Henry W. Parker.....	1870	1 term						
Thomas H. Stack.....	1877	19 terms	2 terms	4 terms				
William H. Niles.....	1875	1 term				100,000	40,000	
Z. W. Kemp.....	1847	4 years						
John P. Marshall.....	1892	2 terms						
	1855	1 year						
		do						
Chester Dewey.....	1829	2 terms				8,000	2,875	250
Homer T. Fuller.....	1888	1 year				2,500		200
A. Kennedy.....	1848	1 term				1,000	800	200
		2 terms						
L. R. Fisk.....		do					4,200	300
Charles A. Davis.....	1891	½ year			50	750	5,000	441
Douglass Houghton.....	1841	2 to 3 years			1,000	30,000	100,000	1,000
George Clark.....		1 term			100	300		50
Charles Scott.....	1859	3 terms			12	3,500	7,853	397
	1866	do						
Albert Williams, jr.....	1880	5 terms or more.	2 terms	2 terms		20,000	53,139	
	1850	1 term						
		do						
	1869	6 terms	2 terms	1 term	1,000			
William W. Payne.....	1873	1 term			75	2,500	4,000	400
A. C. Bothe.....	1891							
	1883	1 term					1,500	100
		do						
J. P. Ethler.....	1889	do					1,000	
D. L. Phares.....	1882	1½ terms				500	2,500	20
		3 terms						
A. M. Mackenfuss.....	1893	2 terms						
L. Harper.....	1854	1 year			500	5,000	10,000	150
	1887	1 term						
S. Hatch.....	1856	2 terms				600	500	

TABLE 1.—Statistics of colleges in which geology

Name of school.	Location.	Name of present instructor.	Where not a separate department, combined with—
1	2	3	4
MISSOURI—continued.			
University of State of Missouri.	Columbia	G. C. Broadhead	
Central College	Fayette	J. W. Kilpatrick	Biology
Westminster College	Fulton	J. W. Lyle	Chemistry, zoology
Pritchett School Institute	Glasgow	W. N. Holmes	Physics, chemistry
Ozark College	Greenfield	G. E. McPollock	Natural science
William Jewell College	Liberty	J. E. Eaton	Chemistry, physics
Missouri Valley College	Marshall	T. W. Galloway	Biology
Scarritt College Institute	Neosho	C. C. Wood	Philosophy
Park College	Parkville	M. C. Findley	Physics, chemistry
School of Mines and Metallurgy, University Missouri.	Rolla	C. De Kalb	Mining, metallurgy
Washington University	St. Louis	G. Hambach	do
Drury College	Springfield	E. M. Shepard	Biology
Tarkio College	Tarkio	P. C. McKillop	Mathematics, astronomy
Avalon College	Trenton	F. E. Washburn	Natural science and engineering
Central Wesleyan College	Warrenton	J. H. Frick	Mathematics and natural science
Northwest Missouri College	Albany	D. H. Bishop	Natural science
MONTANA.			
Montana College of Agriculture and Mechanic Arts.	Bozeman	F. W. Trophagen	Chemistry
College of Montana	Deer Lodge	W. G. King	
NEBRASKA.			
University of Omaha	Bellevue	A. J. Erisman	Physics, chemistry
Cotner University	Bethany	N. A. Stull	Natural science
Doane College	Crete	J. H. Powers	Biology
Fairfield College	Fairfield	W. M. Kern	Science
University of Nebraska	Lincoln	E. H. Barbour	
Creighton University	Omaha	C. Borgmeyer	Philosophy, mathematics
Nebraska Wesleyan University.	University Place	C. Fordyce	Natural science
York College	York	Vacant	do
NEVADA.			
State University	Reno	W. McMiller	Anatomy, physiology
NEW HAMPSHIRE.			
New Hampshire College of Agriculture and Mechanic Arts.	Durham	C. M. Weed	Biology
Dartmouth College	Hanover	C. H. Hitchcock	
NEW JERSEY.			
Rutgers College	New Brunswick	A. H. Chester	
College of New Jersey	Princeton	W. B. Scott	
NEW MEXICO.			
Albuquerque College	Albuquerque	In prospect	
New Mexico College of Agriculture and Mechanic Arts.	Mesilla Park	E. O. Wooton	Botany
NEW YORK.			
Alfred University	Alfred	C. M. Post	Botany, Zoology, Physics
St. Bonaventure's College and Seminary	Allegany	P. J. Wilson	Natural philosophy
Polytechnic Institute	Brooklyn	G. W. Plympton	Engineering
Canisius College	Buffalo	M. Bischoff	Philosophy and astronomy
St. Lawrence University	Canton	Vacant	
Hamilton College	Clinton	C. H. Smyth	
Hobart College	Geneva	H. L. Smith	Meteorology, physics

is taught, length of time, equipment, etc.—Continued.

By whom first taught.	Date when first taught	Time given to—			Estimated value of—		Estimated number of—	
		General geology, mineralogy, and paleontology.	Petrography.	Economic geology.	Instruments, maps, etc.	Minerals, rocks, and fossils.	Specimens.	Volumes in library.
5	6	7	8		9	10	11	12
E. H. Leffingwell	1843	3 years		1 term	\$225	\$485	1,300	124
W. G. Miller	1872	1 term			300	600	1,000	200
S. S. Laws	1855	do			50	500	2,000	250
S. H. Trowbridge	1860	2 terms			25	5,000	10,000	144
	1883	do			100	200	400	
J. R. Eaton	1870	1 year						
B. L. Seawell	1889	1 year					400	150
Prof. Montgomery	1888	2 terms				300	350	
J. Wilson	1875	1 term			110	25	200	40
		1 year			250	4,000	4,000	143
W. B. Potter	1871	3 terms				12,000		
O. Brown	1875	2 terms	1 term		150	500	2,000	800
S. W. Gilky	1888	1 term						
		do						
		do						
		do						
		3 terms			50	150		25
		2 terms						
W. D. McFarland	1891	4 terms			100			
T. J. Oliver	1890	3 terms						
D. B. Perry	1877	2 terms				150	800	150
	1878	1 term					200	
S. Anghey	1871	3½ years			1,000	2,000	3,500	950
J. Rigge	1890	1 term			150	5,000	10,000	40
C. C. Webb	1890	do			50	200	2,000	6
J. George	1893	do						
W. McMiller	1888	1 term		1 term	175	400	1,000	125
C. H. Hitchcock		1 term			500	3,500		
		6 terms	1 term	1 term				
G. H. Cook	1865	2 terms				20,000	11,500	1,100
J. Henry	1845	2 years			10,000	6,000	22,600	5,000
E. O. Wooton	1891	2 terms				100	700	35
W. C. Kenyon	1845					1,000	10,000	100
J. J. Molloy	1875	2 terms			300			100
C. R. Stone	1855	4 terms			75	4,000	4,500	
M. Bischoff	1890	2 terms			50	1,000	2,000	60
J. H. Chapin	1871				100	1,000	5,000	
Oren Root	1849	2 terms			1,000	10,000	18,000	
H. Webster	1825	1 term				9,100		

¹ Possibly not complete; the numbers given in the college catalogue are not stated to be inclusive.

TABLE 1.—Statistics of colleges in which geology

Name of school.	Location.	Name of present instructor.	Where not a separate department, combined with—
1	2	3	4
NEW YORK—continued.			
Colgate University	Hamilton	A. P. Brigham	Zoology, botany
Cornell University	Ithaca	(See page 839)	(See page 839)
Kenka College	Kenka College	W. H. Gardner	Physics
Manhattan College	New York City	Brother Elzear	
College of City of New York	do	W. Stratford	Biology
Columbia College	do	J. H. Kemp and others	
		(see page 840)	
University of City of New York	do	J. J. Stevenson	
St. John's College	do		
Niagara University	Niagara University	P. MacHale	
Vassar College	Poughkeepsie	Wm. B. Dwight	
University of Rochester	Rochester	H. L. Fairchild	
Union College	Schenectady	C. S. Prosser	
Syracuse University	Syracuse	C. W. Hargitt ¹	Biology
Rensselaer Polytechnic Institute	Troy	H. B. Mason ²	Meteorology
United States Military Academy	West Point	S. E. Tillman	Chemistry
NORTH CAROLINA.			
University of North Carolina	Chapel Hill	Collier Cobb	
Davidson College	Davidson	H. L. Smith	Physics
Guilford College	Guilford College		Natural history
North Carolina College	Mount Pleasant	H. T. J. Ludwig	Mathematics, physics, astronomy
Catawba College	Newton	J. H. Foil	Natural science
Livingstone College	Salisbury	F. H. Noble	do
Shaw University	Raleigh	M. C. Leonard	do
Wake Forest College	Wake Forest	Wm. L. Potat	Biology
NORTH DAKOTA.			
North Dakota Agricultural College	Fargo	W. H. Whalen	
Fargo College	do	H. McCoy	Sciences
University of North Dakota	University	E. J. Babcock	Chemistry
Red River Valley University	Wahpeton	M. V. B. Knox	Biology
OHIO.			
Buchtel College	Akron	E. W. Claypole	Biology
Mount Union College	Alliance	William Soule	Chemistry
Ashland University ³	Ashland	J. Allen Miller	Natural science
Ohio University	Athens	H. E. Chapin	Biology
Baldwin University	Berea	J. H. Smith	Natural science
Saint Xavier College	Cincinnati	Jos. Riggs	Philosophy
University of Cincinnati	do	J. P. McMurrich	Biology
Case School of Applied Science	Cleveland	F. M. Comstock	Botany, zoology
Western Reserve University	do	H. P. Cushing	
Ohio State University	Columbus	Edward Orton	
		Florence Bascom ³	
Defiance College	Defiance	A. Grabowski	Natural sciences, mathematics, languages
Ohio Wesleyan University	Delaware	E. T. Nelson	Physiology
Findlay College	Findlay	A. C. Redding	Sciences
Kenyon College	Gambier	T. Sterling	Botany, physics
Denison University	Granville	W. Y. Tigt	Natural history
Hiram College	Hiram	G. H. Colton	Natural science
Hopedale Normal College	Hopedale	J. R. May	Normal and classics
Lima College	Lima	C. L. Boyer	Mathematics, etc
Milligan College	Milligan		
Muskingum College	New Concord	J. McBurney	Natural science
Oberlin College	Oberlin	A. A. Wright	
		G. F. Wright	Zoology

¹ Dr. E. C. Quereau, of the University of Chicago, appointed to chair of geology in 1895.² Died January 18, 1895.³ Resigned 1895; now at Bryn Mawr. J. A. Bownocker appointed 1895.

is taught, length of time, equipment, etc.—Continued.

By whom first taught.	Date when first taught.	Time given to—			Estimated value of—		Estimated number of—	
		General geology, mineralogy, and paleontology.	Petrography.	Economic geology.	Instruments, maps, etc.	Minerals, rocks, and fossils.	Specimens.	Volumes in library.
5	6	7	8		9	10	11	12
A. S. Bickmore	1868	6 terms	3 terms	2 terms	\$1,600	\$5,000	5,000	.....
F. Hartt	1868	10 terms	2 terms	1 term	5,000	51,800	100,000	.....
D. Millspaugh	1892	2 terms						
Brother Ogorien	1868	do				4,000	5,000	100
R. O. Doremus	1852	do			50	1,700	3,470	150
John D. Gross	1784	do			5,000	50,000	75,000	5,000
J. W. Draper	1850	3½ years			800	4,500	17,000	.....
P. V. Kavanagh	1870	1 term						
		2 terms			400	300	2,000	50
C. Dewey	1850	4 terms					9,700	.....
Jno. Pearson	1845	3 terms			300	40,000	50,000	350
A. Winchell	1872	6 terms				10,000	3,000	875
A. Eaton	1825	3 terms			50	4,000	1,500	.....
		2 terms					18,700	300
W. F. Hopkins	1835	1 term			500	4,800	10,000	95
D. Olmstead	1817	4 years					2,800	2,500
W. H. Kerr	1857	6 years				3,500	10,000	
E. C. Perisho	1888	½ year			40		200	
L. A. Bickle	1870	1 term				100		
H. H. Smith	1852	2 terms						
F. H. Noble	1886	1 term				75	200	
		2 terms						
		1 term						
W. H. Whalen	1894	2 terms			100	200	530	125
		do				50		30
H. Montgomery	1887	1½ terms					1,800	
		2 terms				500	2,000	50
I. Chapman	1851	2 terms						
		4 terms						
H. Dwight	1830	2 terms				500		
	1846	1 term				1,500	2,500	80
		do				400		
H. A. Wood	1885	½ year						
		2 terms			50	1,000	3,000	250
S. John	1839	1 term			2,000	6,000	12,000	500
E. Orton	1875	6 terms	2 years	1 term	1,000	24,000	20,000	500
Mr. McKee	1890	2 terms				50	300	40
F. Merrick	1845	3 terms		½ term		10,000		
A. C. Redding	1886	2 terms				2,000		
		1 term						
		3 terms						
C. Wilber	1850	1 term				500	1,500	
W. Brinkerhoff	1875	do					400	
		2 terms						
		1 term						
		do					250	
George N. Allen	1847	2 terms			300	10,000	7,500	750

TABLE 1.—Statistics of colleges in which geology

Name of school.	Location.	Name of present instructor.	Where not a separate department, combined with—
1	2	3	4
OHIO—continued.			
Miami University.....	Oxford.....	A. L. Treadwell.....	Biology.....
Scioto College.....	Scioto.....	W. G. Compher.....	Chemistry, physics.....
Heidelberg University.....	Tiffin.....	M. Kleckner.....	Biology.....
Urbana University.....	Urbana.....	T. F. Moses ¹	Zoology.....
Otterbein University.....	Westerville.....	L. McFadden.....	Natural science.....
Farmington College.....	West Farmington.....	R. C. McBride.....	Botany, physics.....
University of Wooster.....	Wooster.....	J. Kirkwood.....	Biology.....
Antioch College.....	Yellow Springs.....	G. H. Hubbell.....	Astronomy.....
Wilberforce University.....	Wilberforce.....	T. D. Scott.....	
OKLAHOMA.			
University of Oklahoma.....	Norman.....		Physics, botany, zoology..
Oklahoma Agricultural and Mechanical College.	Stillwater.....	J. C. Neal.....	Natural science.....
OREGON.			
Oregon State Agricultural College.	Corvallis.....	G. W. Shaw.....	Physics.....
University of Oregon.....	Eugene.....	T. Condon.....	History.....
Lafayette Seminary.....	Lafayette.....	T. W. Bittle.....	Natural science.....
McMinnville College.....	McMinnville.....	W. F. Fargo.....	Botany, chemistry, physics
Pacific College.....	Newberg.....	J. Jessup.....	Natural science.....
Philomath College.....	Philomath.....	H. Sheak.....	Chemistry, natural history
Portland University.....	Portland.....	J. J. Rippetoe.....	Physics.....
Willamette University.....	Salem.....	L. Cochran.....	Sciences.....
PENNSYLVANIA.			
Western University of Pennsylvania.	Allegheny.....	Frank W. Very.....	Astronomy.....
Muhlenberg College.....	Allentown.....	J. A. Bauman.....	Natural science.....
Lebanon Valley College.....	Annville.....	J. A. Shott.....	Chemistry, etc.....
Geneva College.....	Beaver Falls.....	W. McCracken.....	Sciences.....
Moravian College.....	Bethlehem.....	H. A. Jacobson.....	Natural science.....
Dickinson College.....	Carlisle.....	W. B. Lindsay.....	Chemistry.....
Pennsylvania Military College.	Chester.....	B. F. Morley.....	Engineering, chemistry, arts.
Ursinus College.....	Collegeville.....		Chemistry, biology.....
Lafayette College.....	Easton.....	T. C. Porter.....	Mining engineering and biology.
Pennsylvania College.....	Gottysburg.....	E. S. Breidenbaugh.....	Chemistry.....
Thiel College.....	Greenville.....	S. H. Miller.....	Natural science.....
Grove City College.....	Grove City.....	S. Dodds.....	do.....
Haverford College.....	Haverford.....	H. O. Pratt.....	Biology.....
Franklin and Marshall College.	Lancaster.....	John S. Stahr.....	
Bucknell College.....	Lewisburg.....	G. G. Groff.....	Organic science.....
Allegheny College.....	Meadville.....	J. Montgomery.....	Physics.....
Central Pennsylvania College	New Berlin.....	W. P. Winter.....	Natural science.....
Westminster College.....	New Wilmington.....	S. Thompson.....	Botany, physics.....
Boys' Central High School..	Philadelphia.....	O. C. S. Carter.....	
University of Pennsylvania.	do.....	A. P. Brown.....	Metallurgy.....
Lehigh University.....	South Bethlehem.....	Ed. H. Williams, jr.....	Mining engineering.....
Pennsylvania State College..	State College.....	{M. C. Ihlseng.....}	{Mining.....}
Swarthmore College.....	Swarthmore.....	{T. C. Hopkins.....}	{Biology.....}
Washington and Jefferson College.	Washington.....	S. Trotter.....	do.....
		Ed. Linton.....	
RHODE ISLAND.			
Rhode Island Agricultural and Mechanical Arts College.	Kingston.....	H. J. Wheeler.....	
Brown University.....	Providence.....	A. S. Packard.....	Zoology.....

¹ Professor Moses resigned in 1894; position now vacant.

is taught, length of time, equipment, etc.—Continued.

By whom first taught.	Date when first taught.	Time given to—			Estimated value of—		Estimated number of—	
		General geology, mineralogy, and paleontology	Petrography.	Economic geology.	Instruments, maps, etc.	Minerals, rocks, and fossils.	Specimens.	Volumes in library.
5	6	7	8		9	10	11	12
A. D. Lee.....	1866	2 terms				\$300		100
R. Good.....	1851	3 terms					500	50
T. F. Moses.....	1875	do			\$100	10,000		250
J. Haywood.....	1851	1 term				300	2,000	250
Professor Green.....	1885	do			10	150	500	75
D. Stoddard.....	1870	do				100		
Professor Chandler.....	1853	3 terms		1 term		1,000	3,000	500
		2 terms				1,000	15,000	90
E. De Bow.....	1894	1 year						
		1 term				200		
J. E. Emery.....	1868	2 terms				3,000	2,000	
T. Condon.....	1877	3 terms				10,000		
C. A. Bowman.....	1888	1 term						
M. Bailey.....	1872	do						50
J. Jessup.....	1891	do			100			10
	1867	do						
J. J. Rippetoe.....	1892	2 terms				100	1,000	10
		1 year					1,200	
		1 term						
D. Garber.....	1869	1 year				500	1,000	231
T. R. Vickroy.....	1867	2 terms				250	600	100
	1860	1 term					600	50
E. G. Klose.....	1870	do					150	50
		3 terms				1,500	5,000	
A. Armagnac.....	1867	1 term					500	50
H. W. Super.....	1870	2 terms					200	50
P. A. Browne.....	1837	do		1 term	1,000	2,500	6,000	400
M. Jacobs.....	1837	do				7,000	10,000	
D. McKee.....	1870	1 mineralogy, 1 geology.				500	1,500	150
J. McClelland.....	1882	1 term		1 term				
E. D. Cope.....	1860	1 year					3,000	200
T. C. Porter.....	1853	3 terms						
	1852	1 term			100	1,000	4,575	100
Matthew Simpson.....	1837	2 terms			6,000	8,000	20,000	
A. E. Gobble.....	1880	4 terms			5	600	3,600	110
A. M. Black.....	1857	1 term			500	1,000	6,000	243
O. C. S. Carter.....	1889	1 year					540	70
H. D. Rogers.....	1835	6 terms			600	15,000	20,000	500
		3 mineralogy, 1 geology.	1 term				10,000	
		2 terms		1 term				
J. Leidy.....	1872	1 term			25	1,000	4,000	90
		3 mineralogy, 1 geology.						
H. J. Wheeler.....	1894	2 terms			100	100		50
G. I. Chace.....	1836	2½ terms			400	2,500	19,724	320

TABLE 1.—Statistics of colleges in which geology

Name of school.	Location.	Name of present instructor.	Where not a separate department, combined with—
1	2	3	4
SOUTH CAROLINA.			
College of Charleston	Charleston	G. E. Manigault	Natural history
South Carolina Military Academy.	do	C. L. Reese	Chemistry, physics
Presbyterian College of South Carolina.	Clinton	D. Frierson	Natural science
South Carolina College	Columbia	J. Woodrow	Biology
Erskine College	Due West	E. L. Reid	Chemistry
Furman University	Greenville	W. F. Watson	do
Claffin University	Orangeburg	J. C. Hartzell	Biology
Wofford College	Spartanburg	D. A. Du Pré	Chemistry, physics
SOUTH DAKOTA.			
Pierre University	East Pierre	W. M. Blackburn	Physical geography
Black Hills College	Hot Springs	J. Hancher	Sciences
State School of Mines	Rapid City	F. C. Smith	Mining, civil engineering, general science
Redfield College	Redfield	J. H. Arnold	Natural science
University of South Dakota	Vermillion	J. E. Todd	Natural science
Yankton College	Yankton	A. T. Free	
TENNESSEE.			
U. S. Grant University	Athens	W. J. Brown	Natural science
Southwestern Presbyterian University.	Clarksville	James A. Lyon	Zoology
American Temperance University.	Harriman	W. Stoopsburg	Natural science
Southern Normal University.	Huntingdon	E. C. McDougle	Sciences
Southwestern Baptist University.	Jackson	T. J. Deupur	do
Knoxville College	Knoxville	W. A. Dunn	do
University of Tennessee.	do	C. F. Vanderford	Agriculture, etc.
Cumberland University	Lebanon	J. I. D. Hinds	Sciences
Maryville College	Maryville	G. S. Fisher	do
Bethel College	McKenzie	T. W. Cannon	do
Milligan College	Milligan		Chemistry, zoology
Hiwassee College	Hiwassee College	William L. Lawrence	Engineering and natural science
Carson & Newman College	Mossey Creek	J. C. Welsh	Natural science
Central Tennessee College	Nashville	William Osburn	do
Fisk University	do	F. A. Chase	Sciences
Vanderbilt University	do	James M. Safford	Natural history
Burritt College	Spencer	Paul M. Jones	Natural science
Greenville and Tusculum College.	Tusculum	W. N. Billingsley	Mathematics
Washington College	Washington College	L. C. Haynes	Greek, etc.
TEXAS.			
University of Texas	Austin	F. W. Simonds	
Howard Payne College	Brownwood	J. L. Kessler	Zoology, botany
Agricultural and Mechanical College.	College Station	H. H. Harrington	Chemistry
Fort Worth University	Fort Worth	Ira C. Chase	
Southwestern University	Georgetown	R. S. Hyer	Natural sciences
Wiley University	Marshall	A. O. Coffin	Chemistry, botany, zoology
Austin College	Sherman	C. C. Scott	Chemistry
Trinity University	Tehuacana	S. L. Hornbeak	Natural history
Add-Ran Christian University.	Thorp Spring	W. B. Parks	Physics, chemistry
Baylor University	Waco	Not taught at present	
UTAH.			
University of Utah	Salt Lake City	J. E. Talmage	
		Wm. D. Neal	
VERMONT.			
University of Vermont	Burlington	G. H. Perkins	
		H. Loomis	Biology
Middlebury College	Middlebury	J. L. Hills	
		H. M. Seely	do

is taught, length of time, equipment, etc.—Continued.

By whom first taught.	Date when first taught.	Time given to—			Estimated value of—		Estimated number of—	
		General geology, mineralogy, and paleontology.	Petrography.	Economic geology.	Instruments, maps, etc.	Minerals, rocks, and fossils.	Specimens.	Volumes in library.
5	6	7	8		9	10	11	12
F. E. Holmes	1852							
W. G. Brown	1886	2 terms			\$200	\$150	1,500	45
William S. Lee	1883	1 term						
T. Cooper	1820	1 year			500	3,000		100
William Hood	1869	4 months					500	
J. S. Hayward	1890	2 terms			300	250	1,800	250
W. A. Du Pré	1885	4 months			150	800	3,000	
T. M. Findley	1884	1 term				18	53	15
H. D. Smith	1890	2 terms				200	400	25
F. R. Carpenter	1887	1 year			52	1,000	3,027	202
D. H. Dempster	1888	1 term				250	300	10
G. E. Culver	1888	6 terms	2 terms	1 term	300	700	2,500	137
A. T. Free	1888	3 terms			500	1,000	6,000	86
W. M. Stewart		1 term					10,000	
J. A. Hicks	1893	do					300	
A. Davison	1892	3 terms						
	1850	1 term			50		1,000	100
							800	6
D. T. McClelland	1882	1 term					100	20
H. Nicholson	1870	2 terms				700	3,900	
J. H. Sharp	1842	1 term			300	600		
T. J. Lamar	1806	100			100	600		
	1850	2 terms				250	500	400
J. Hopwood	1850	50			50	25		
	1881	1 term					600	
		2 terms						
W. Patterson		1 term				200	1,000	
F. A. Chase	1876	2 terms			25	500	1,000	15
	1875	1 term					3,000	45
		2 terms		2 terms				
W. D. Carnes	1870	1 term			300	100	115	50
		do				150	300	
L. Caruthers	1847	do			60			
R. T. Hill	1888	7 terms	1 term	1 term	350	2,500	3,300	500
J. H. Grove	1890	3 terms			50	90	650	57
H. H. Dinwiddie	1883	2 terms			200	200	200	40
		1 term						
R. S. Hyer	1888				1,000	500		
A. O. Coffin	1889	1 term				10	100	
	1850	do						
	1872	2 terms			200	200		50
A. Clark	1873	do			75	100	150	50
J. R. Park	1868	4 terms			500	5,000	17,500	400
G. W. Benedict	1839	1 year			100	1,500	3,000	500
C. B. Adams	1838				5,000		4,000	

TABLE 1.—Statistics of colleges in which geology

Name of school.	Location.	Name of present instructor.	Where not a separate department, combined with—
1	2	3	4
VIRGINIA.			
Randolph-Macon College.....	Ashland.....	W. A. Shepard.....	Chemistry.....
Virginia Agricultural and Mechanical College.....	Blacksburg.....	T. L. Watson.....	do.....
Bridgewater College.....	Bridgewater.....	J. C. Miller.....	
University of Virginia.....	Charlottesville.....	W. M. Fontaine.....	
Emory and Henry College.....	Emory.....	J. L. Yarnan.....	Natural sciences.....
Hampden Sidney College.....	Hampden Sidney.....	J. H. C. Bagby.....	Chemistry, physics.....
Virginia Military Institute.....	Lexington.....	W. B. Tucker.....	
Washington and Lee University.....	do.....	H. D. Campbell.....	Biology.....
Roanoke College.....	Salem.....	S. C. Wells.....	Mathematics, astronomy.....
WASHINGTON.			
Vashon College.....	Burton.....	A. C. Jones.....	Natural sciences.....
University of Seattle.....	Dunlap.....	D. J. Pierce.....	Chemistry, physics.....
Whitworth College.....	Sumner.....	C. M. Stewart.....	
Puget Sound University.....	Tacoma.....	W. S. Arnold.....	Botany, zoology, etc.....
University of Washington.....	Seattle.....	Harry Landoe.....	
WEST VIRGINIA.			
Barboursville College.....	Barboursville.....	R. W. Douthat.....	Chemistry, botany, zoology.....
West Virginia Conference Seminary.....	Buckhannon.....	C. J. C. Bennett.....	Natural sciences, mathematics.....
West Virginia University.....	Morgantown.....	S. B. Brown.....	
WISCONSIN.			
Lawrence University.....	Appleton.....	D. Nicholson.....	Zoology, botany.....
Beloit College.....	Beloit.....	Geo. L. Collie.....	
University of Wisconsin.....	Madison.....	C. R. Van Hise.....	}
		W. H. Hobbs.....	
		J. M. Clements.....	
Milton College.....	Milton.....	L. Kumlhen.....	Sciences.....
Ripon College.....	Ripon.....	C. D. Marsh.....	Biology.....
Seminary of St. Francis of Sales.....	St. Francis.....	L. E. Drexel.....	
Northwestern University.....	Watertown.....	C. A. Ernst.....	Physiology, geography.....
WYOMING.			
Wyoming Collegiate Institute.....	Big Horn.....	H. Robinson.....	Physics, chemistry.....
University of Wyoming.....	Laramie.....	W. C. Knight.....	Metallurgy, mining, engineering.....

is taught, length of time, equipment, etc.—Continued.

By whom first taught.	Date when first taught.	Time given to—			Estimated value of—		Estimated number of—	
		General geology, mineralogy, and paleontology.	Petrography.	Economic geology.	Instruments, maps, etc.	Minerals, rocks, and fossils.	Specimens.	Volumes in library.
5	6	7	8		9	10	11	12
C. B. Stuart.....	1847	2 terms			\$25	\$50	50	40
R. C. Price	1890	..... do			250	750	2,250	.....
J. C. Miller.....	1883	1 term				100		.....
W. B. Rogers.....	1840	..... do			7,750	30,884	12,500	.....
O. Collins	1843	2 terms				200	500	50
W. Gilham	1851	1 term			700	1,850	3,847	361
		2 terms .....						.....
D. Bittle	1853	..... do					12,000	.....
A. C. Jones.....	1894	2 terms				100	500	27
D. J. Pierce.....	1894	..... do						3
C. M. Stewart.....	1894	3 terms						6
W. S. Arnold	1894	2 terms			20	50	100	25
		..... do .....						.....
R. W. Douthat.....	1891	1 term					300	10
		..... do .....						.....
J. J. Stevenson.....	1808	6 terms		2 terms	500	1,500	5,000	100
J. Phinney.....	1850	3 terms			100	1,000	3,000	200
J. J. Bushnell.....	1847	9 terms			500	1,500	1,200	250
R. D. Irving.....	1869	..... do	5 terms	1 term	3,500	5,000	15,000	1,000
W. Whitford	1858	3 terms			200	4,000	5,000	50
J. Walcott	1854	1 term					2,800	500
L. E. Drexel.....	1894	2 terms				500	1,500	50
L. O. Thompson	1860	..... do			100	1,000	5,000	.....
		..... do .....						.....
J. D. Conley	1887	2 terms		1 term		100	400	200

TABLE 2.—Summary of statistics of colleges in which geology is taught.

State.	Universities and colleges in which geology is taught.	In which it is a separate department.	Graduate students in geology in 1893-94.	State.	Universities and colleges in which geology is taught.	In which it is a separate department.	Graduate students in geology in 1893-94.
Alabama.....	6	1	.....	Nebraska.....	8	1	4
Arizona.....	1	.....	.....	Nevada.....	1	.....	.....
Arkansas.....	5	.....	.....	New Hampshire.....	2	1	.....
California.....	7	2	12	New Jersey.....	2	.....	3
Colorado.....	7	2	.....	New Mexico.....	1	.....	.....
Connecticut.....	4	2	7	New York.....	22	9	17
Delaware.....	2	.....	.....	North Carolina.....	8	1	3
District of Columbia.....	4	1	2	North Dakota.....	4	.....	.....
Florida.....	3	.....	.....	Ohio.....	30	2	2
Georgia.....	9	.....	.....	Oregon.....	8	.....	.....
Idaho.....	1	.....	.....	Pennsylvania.....	24	1	9
Illinois.....	20	3	13	Rhode Island.....	2	.....	.....
Indiana.....	13	1	.....	South Carolina.....	8	.....	.....
Indian Territory.....	1	.....	.....	South Dakota.....	6	2	.....
Iowa.....	17	.....	.....	Tennessee.....	19	.....	.....
Kansas.....	16	1	.....	Texas.....	10	1	.....
Kentucky.....	9	.....	.....	Utah.....	1	1	.....
Louisiana.....	5	.....	.....	Vermont.....	2	.....	.....
Maine.....	4	1	.....	Virginia.....	9	1	.....
Maryland.....	9	1	18	Washington.....	4	.....	.....
Massachusetts.....	11	8	11	West Virginia.....	3	1	.....
Michigan.....	10	1	4	Wisconsin.....	7	2	4
Minnesota.....	6	1	9	Wyoming.....	2	.....	.....
Mississippi.....	4	.....	.....	Total.....	378	51	.....
Missouri.....	19	1	4				
Montana.....	2	.....	.....		

TABLE 3.—Graduate students in geology, 1893-94.

Institution.	As a major study.	As a minor study.
Alabama Polytechnic Institute, Auburn, Ala.....	1	.....
University of California, Berkeley, Cal.....	4	3
Leland Stanford Junior University, Stanford University.....	5	(¹)
Yale University, New Haven, Conn.....	² 5	.....
Wesleyan University, Middletown, Conn.....	.....	2
Columbia University, Washington, D. C.....	.....	2
University of Chicago, Chicago, Ill.....	10	3
Johns Hopkins University, Baltimore, Md.....	12	6
Harvard University, Cambridge, Mass.....	² 11	.....
University of Michigan, Ann Arbor, Mich.....	.....	1
Michigan Mining School, Houghton, Mich.....	.....	3
University of Minnesota, Minneapolis, Minn.....	3	6
University of State of Missouri, Columbia, Mo.....	3	1
University of Nebraska, Lincoln, Nebr.....	.....	4
College of New Jersey, Princeton, N. J.....	3	.....
Columbia College, New York City.....	2	7
Cornell University, Ithaca, N. Y.....	2	6
University of North Carolina, Chapel Hill, N. C.....	1	2
Ohio State University, Columbus, Ohio.....	2	.....
University of Pennsylvania, Philadelphia, Pa.....	.....	9
University of Wisconsin, Madison, Wis.....	4	.....
Total.....	68	55

¹ Figures not given.² For 1894-95, and not stated whether major or minor students.³ Not stated whether major or minor students in geology.

TABLE 4.—*Number of colleges beginning the subject of geology in the different years from 1845 to 1895.*

Year.	Col- leges.	Year.	Col- leges.	Year.	Col- leges.	Year.	Col- leges.
1845.....	7	1858.....	2	1871.....	5	1884.....	3
1846.....	1	1859.....	4	1872.....	6	1885.....	5
1847.....	5	1860.....	4	1873.....	3	1886.....	7
1848.....	1	1861.....	1	1874.....	5	1887.....	6
1849.....	1	1862.....	2	1875.....	9	1888.....	11
1850.....	6	1863.....	2	1876.....	3	1889.....	6
1851.....	5	1864.....	2	1877.....	3	1890.....	12
1852.....	5	1865.....	5	1878.....	1	1891.....	13
1853.....	4	1866.....	4	1879.....	3	1892.....	8
1854.....	4	1867.....	3	1880.....	2	1893.....	4
1855.....	4	1868.....	8	1881.....	2	1894.....	14
1856.....	3	1869.....	9	1882.....	3	1895 (2 months).....	3
1857.....	5	1870.....	12	1883.....	10		

Previous to 1845 there were 31 colleges and universities teaching geology, 1 beginning in 1804, 1 in 1807, 1 in 1817, and 1 in each of the years between 1820 and 1845, except the years 1822, 1824, 1833, and 1834, when there were none, and the years 1825, 1826, 1835, 1836, 1839, and 1843, when there were 2 each year, and in 1837 there were 3.

It will be noticed that there were more beginning the subject in the year 1894 (14) than in any previous year. In the same year two professorships in geology were endowed. The effect of the civil war will be noticed in the years 1861, 1862, and 1863, and the financial panic of 1877 in the few years following that date.

List of the presidents of colleges who teach geology, the name of the college, and the branches taught by each.

Name of president.	Name of college.	State, etc.	Branches taught.
Theo. B. Comstock.....	University of Arizona.....	Arizona.....	Geology and mining.
W. S. Johnson.....	Mountain Home Baptist College.....	Arkansas.....	Natural science.
John McLean.....	The Presbyterian College of the Southwest.....	Colorado.....	
B. F. Koons.....	Storrs Agricultural College.....	Connecticut.....	Geology and zoology.
C. O. Stubbs.....	Bowdon College.....	Georgia.....	Geology, philosophy, chemistry, astronomy.
Lamont Gordon.....	Methodist Episcopal College.....	do.....	General science.
Fred Lutz.....	Wartburg Teachers' Seminary.....	Iowa.....	Geology and mineralogy.
L. G. Adkinson.....	New Orleans University.....	Louisiana.....	Geology and mental and moral philosophy.
Homer T. Fuller.....	Worcester Polytechnic Institute.....	Massachusetts.....	Geology and mineralogy.
M. E. Wadsworth.....	Michigan Mining School.....	Michigan.....	Geology and mining.
E. M. Shepard (acting president).....	Drury College.....	Missouri.....	Geology and biology.
S. M. Dick.....	Missouri Wesleyan College.....	do.....	Geology and philosophy.
M. V. B. Knox.....	Red River Valley University.....	North Dakota.....	History and natural science.
Arthur Grabowski.....	Defiance College.....	Ohio.....	Mathematics, modern languages, and natural science.
Theodore Sterling.....	Kenyon College.....	do.....	Geology, physics, and botany.
John S. Slater.....	Franklin and Marshall College.....	Pennsylvania.....	
James Woodrow.....	South Carolina College.....	South Carolina.....	Geology, mineralogy, and biology.
Wm. M. Blackburn.....	Pierre University.....	South Dakota.....	Geology, mineralogy, and physical geography.
John W. Hancher.....	Black Hills College.....	do.....	Geology, physiology, chemistry, and biology.
Albert T. Free.....	Free Yankton College.....	do.....	Geology and mineralogy.
James T. Cooter.....	Washington College.....	Tennessee.....	Geology, mineralogy, Greek, mental and moral science.
James E. Talmage.....	University of Utah.....	Utah.....	Geology and mineralogy.
A. C. Jones.....	Vashon College.....	Washington.....	Do.
Calvin M. Stewart.....	Whitworth College.....	do.....	Geology, etc.

Ladies teaching geology in the colleges in the United States.

Name.	College.	Location.	Branches taught.
Miss Eva J. Root.....	Rollins College	Winter Park, Fla.....	French, history, and natural science.
Miss Ruth H. Haldrum.....	Selma University	Selma, Ala.....	Natural science.
Miss Mary E. Wood.....	Oskaloosa College.....	Oskaloosa, Iowa.....	Geology, botany, zoology.
Miss Flora E. Strout.....	Morgan College (colored).....	Baltimore, Md.....	Geology and astronomy.
Miss Sarah Y. de Normandie.	Wellesley College.....	Wellesley, Mass.....	Mineralogy and lithology.
Miss Florence Bascom.....	Ohio State University...	Columbus, Ohio.....	Petrography, etc.
Miss M. J. Erisman.....	University of Omaha...	Bellevue, Nebr.....	Geology, physics, chemistry.

CHAPTER IV.

RULES FOR THE SPELLING AND PRONUNCIATION OF CHEMICAL TERMS.

[Adopted by the American Association for the Advancement of Science at its meeting in Washington, D. C., 1891, and readopted at the meeting in Madison, Wis., 1893. See Proceedings Amer. Assoc. Adv. Science, 42d meeting, Madison, 1893, p. 366.]

In 1887 a committee was appointed by the American Association for the Advancement of Science to consider the question of attaining uniformity in the spelling and pronunciation of chemical terms. The work of this committee extended through the following four years. As a result of widespread correspondence and detailed discussion at the annual meetings of the Chemical Section of the American Association for the Advancement of Science, the accompanying rules have been formulated and adopted by the Association. They are submitted to chemists generally, and especially to the large number of those engaged in teaching chemistry, with the request that a cordial and earnest effort be made to render their use general, and thus obviate the many difficulties arising from the present diversities of style.

The following summary of the rules has also been arranged in the form of a chart for general distribution to high schools and colleges, so that they may be kept permanently and prominently before the eyes of teachers and pupils.

T. H. NORTON, Ph. D.,
Professor of Chemistry, University of Cincinnati,
EDWARD HART, Ph. D.,
Professor of Chemistry, Lafayette College, Easton, Pa.,
H. CARRINGTON BOLTON, Ph. D.,
Cosmos Club, Washington, D. C.
JAS. LEWIS HOWE, Ph. D., M. D.,
Washington and Lee University, Lexington, Va.,
Committee.

KEY.

Fäte, fät, für, mäte, mēt, pine, pīn, marine, nôte, nôt, möve, tûbe, tûb, rûle, mÿ,
ÿ = I.

'Primary accent; " secondary accent.

N. B.—The accent follows the vowel of the syllable upon which the stress falls, but does not indicate the division of the word into syllables.

GENERAL PRINCIPLES OF PRONUNCIATION.

1. The pronunciation is as much in accord with the analogy of the English language as possible.
2. Derivatives retain as far as possible the accent and pronunciation of the root word.
3. Distinctly chemical compound words retain the accent and pronunciation of each portion.
4. Similarly sounding endings for dissimilar compounds are avoided (hence -ld, -ite).

ACCENT.

In polysyllabic chemical words the accent is generally on the antepenult; in words where the vowel of the penult is followed by two consonants, and in all words ending in -ic, the accent is on the penult.

PREFIXES.

All prefixes in strictly chemical words are regarded as parts of compound words, and retain their own pronunciation unchanged (as, *ä'ceto-*, *ä'mido-*, *ä'zo-*, *hý'dro-*, *i'so-*, *ní'tro-*, *nitrô'so-*).

ELEMENTS.

In words ending in -ium, the vowel of the antepenult is short if i (as *irí'dium*), or y (as *didý'mium*), or if before two consonants (as *cä'leium*), but long otherwise (as *títä'nium*, *sölë'nium*, *chrô'mium*).

alü'minum	ér'bium	mölý'bdenum	söd'dium
a'ntimony	flü'orín	ný'ckel	strö'ntium (shium)
a'rsë'nic	gä'llium	ní'trogen	sül'fur
bä'r'ium	germā'nium	ö'smium	tä'ntalum
bí'smuth (biz)	glü'cinum	ö'xygen	tellü'rium
bö'ron	gold	pallä'dium	te'r'bium
brö'mín	hý'drogen	phös'phorus	thä'llium
cä'dm'ium	í'ndium	plä'tinum	thö'rium
cä'leium	í'odín	potä'ssium	tin
ca'r'bon	irý'dium	rhö'dium	títä'nium
cö'rium	iron	rubý'dium	tü'ngsten
cë'sium	lä'nthānum	ruthë'nium	ürā'nium
chlö'rín	lead	samā'rium	vā'nā'dium
chrô'mium	lí'thium	scā'ndium	ýt'ter'bium
cö'balt	magnë'sium	sölë'nium	ýt'trium
colü'mbium	(zhium)	sí'licon	zinc
co'pper	ma'nganese (ezo)	silver	zircö'nium
didý'mium	me'rcury		

Also: ämmö'nium, phosphö'nium, hä'logen, cýā'nogen, äml'dogen.

Note in the above list the spelling of the halogens, cesium and sulfur; f is used in the place of ph in all derivatives of sulfur (as sulfuric, sulfite, sulfo-, etc.)

TERMINATIONS IN -ic.

The vowel of the penult in polysyllables is short (as *cýā'nic*, *fūmā'ric*, *arsë'nic*, *sily'eic*, *iö'dic*, *bütý'ric*), except (1) u when not used before two consonants (as *mercü'ric*, *prü'ssic*), and (2) when the penult ends in a vowel (as *benzö'ic*, *olé'ic*); in dissyllables it is long except before two consonants (as *bö'ric*, *eí'tric*). Exception: *acë'tic* or *acë'tic*.

The termination -ic is used for metals only where necessary to contrast with -ous (thus avoid *aluminic*, *ammonic*, etc.)

TERMINATIONS IN -ous.

The accent follows the general rule (as *plä'tinous*, *sül'furous*, *phös'phorous*, *cobaltous*). Exception: *acë'tous*.

TERMINATIONS IN -ate AND -ite.

The accent follows the general rule (as *ä'cetāte*, *vā'nādāte*); in the following words the accent is thrown back: *ä'bietāte*, *ä'leoholāte*, *ä'cetonāte*, *ä'ntimonite*.

TERMINATIONS IN *-id* (FORMERLY *-ide*).

The final *e* is dropped in every case and the syllable pronounced *id* (as *chlō'rid*, *iod'id*, *hŷ'dr'id*, *ō'xid*, *hŷdrō'xid*, *sūl'id*, *ā'm'id*, *ā'n'il'id*, *mūrē'xid*).

TERMINATIONS IN *-ane*, *-ene*, *-ine*, AND *-one*.

The vowel of these syllables is invariably long (as *mē'thāne*, *ē'thāne*, *na'phthalēne*, *a'nthracēne*, *prō'pine*, *quīnōne*, *ā'cetōne*, *kē'tōne*).

A few dissyllables have no distinct accent (as *benzēne*, *xŷlēne*, *cētēne*).

The termination *-ine* is used only in the case of doubly unsaturated hydrocarbons, according to Hofmann's grouping (as *propine*).

TERMINATIONS IN *-in*.

In names of chemical elements and compounds of this class, which includes all those formerly ending in *-ine* (except doubly unsaturated hydrocarbons) the final *e* is dropped, and the syllable pronounced *-in* (as *chlō'r'in*, *brō'm'in*, etc., *ā'm'in*, *ā'n'il'in*, *mo'rph'in*, *quī'n'in* (*kwī'n'in*), *van'il'l'in*, *alloxā'n't'in*, *absi'n'th'in*, *emū'ls'in*, *cā'ffe'in cō'ca'in*).

TERMINATIONS IN *-ol*.

This termination, in the case of specific chemical compounds, is used *exclusively* for alcohols, and when so used is never followed by a final *e*. The last syllable is pronounced *ōl* (as *glŷ'cōl*, *phē'nōl*, *crēsōl*, *thŷ'mōl* (*ti*), *glŷ'cerōl*, *quī'nōl*. Exceptions: *ālcōhōl*, *a'rgōl*).

TERMINATIONS IN *-ole*.

This termination is always pronounced *ōle*, and its use is limited to compounds which are not alcohols (as *ī'ndōle*).

TERMINATIONS IN *-yl*.

No final *e* is used; the syllable is pronounced *yl* (as *ā'cet'yl*, *ā'm'yl*, *cē'rot'yl*, *cē't'yl*, *ē'th'yl*).

TERMINATIONS IN *-yde*.

The *y* is long (as *ā'ldēhŷde*).

TERMINATIONS IN *meter*.

The accent follows the general rule (as *hydrō'mēter*, *barō'mēter*, *lactō'mēter*). Exception: words of this class used in the metric system are regarded as compound words, and each portion retains its own accent (as *cē'ntimē'ter*, *mī'llimē'ter*, *k'v'lomē'ter*).

MISCELLANEOUS WORDS WHICH DO NOT FALL UNDER THE PRECEDING RULES.

Note the spelling: *albumen*, *albuminous*, *albuminiferous*, *asbestos*, *gramme*,* *radical*.

Note the pronunciation: *ā'lkaline*, *ā'lloy* (*n & v.*), *ā'llotropy*, *ā'llotropism*, *ī'somerism*, *pō'lymerism*, *apparā'tus* (*sing. & plu.*), *āqua regia*, *barŷ'ta*, *cēntigrade*, *cō'ncentrated*, *crystallin* or *crystalline*, *electrō'lysis*, *liter*, *mō'lecule*, *mōlēc'ular*, *nō'menclā'ture*, *olē'fiant*, *vā'lence*, *ā'nivā'lent*, *bī'vā'lent*, *trī'vā'lent*, *quā'drivā'lent*, *tī'trate*.

* In accordance with an informal, but general, expression of opinion, since the first publication of these rules, this spelling should be limited to works and publications intended for medical and pharmaceutical use, where it is wished to prevent confusion, in writing, with the word "grain."

A LIST OF WORDS WHOSE USE SHOULD BE AVOIDED IN FAVOR OF THE ACCOMPANYING SYNONYMS.

<i>For—</i>	<i>Use—</i>
sodic, calcic, zincic, nick- elic, etc., chlorid, etc.	sodium, calcium, zinc, nickel, etc., chlorid, etc. (see termination in -ic above.)
arsenetted hydrogen.....	arsin
antimonetted hydrogen.....	stibin
phosphoretted hydrogen.....	phosphin
sulfuretted hydrogen, etc.....	hydrogen sulfid, etc.
<i>For—</i>	<i>Use—</i>
beryllium.....	glucinum
niobium.....	columbium
glycerin.....	glycerol
hydroquinone (and hydrochinon)quinol	
pyrocatechin.....	catechol
resorcin, etc.....	resorcinol, etc.
mannite.....	mannitol
dulcite, etc.....	dulcitol, etc.
benzol.....	benzene
toluol, etc.....	toluene, etc.
thein.....	caffein
<i>For—</i>	<i>Use—</i>
furfurol ¹	furfuraldehyde
fucusol.....	fucusaldehyde
anisol.....	methyl phenate
phenetol.....	ethyl phenate
anethol.....	methylallylphenol
alkylogens.....	alkyl haloids
titer (n).....	strength or standard
titer (v).....	titrate
monovalent.....	univalent
divalent, etc.....	bivalent, etc.
quantivalence.....	valence

NOTES.—The detailed reasons for most of these rules may be found in *Science* 1892, p. 272; *Journal of Analytical and Applied Chemistry*, Vol. VI, p. 534; *Proceedings A. A. A. S.*, 1889-90; *The Medical News*, June 17, 1893.

Among the books printed in accordance with these rules may be mentioned Caldwell—*Chemical Analysis*, 1892; Witthaus—*Manual of Chemistry*, 1888; T. Sterry Hunt—*Systematic Mineralogy*, 1892; Wiley—*Agricultural Chemical Analysis*, 1892; Wiechmann—*Theoretical Chemistry*, 1893; *The Standard Dictionary*, 1895; and various scientific journals.

¹ Cross and Bevan have adopted furfural, which being shorter is perhaps preferable.

CHAPTER V.

THE RISE AND PROGRESS OF MANUAL TRAINING.

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Manual training, as the term is now understood, is the product of two growths which it is well to distinguish. The first is the growth of the trade school, an institution which has gradually been replacing the old form of apprenticeship, as machinery has been introduced forming the large factory, and the labor of crafts has been more and more subdivided. Trade schools are by no means universal, but they are gradually increasing in number.

The second growth from which manual training has gained its chief vigor has been that of the conviction, now very wide spread, that at school much more than books should be studied, and that more should be made of the school period, say from 6 to 16 years. The function of the school has grown wide and deep.

The conditions of society are such—very different from what they were one hundred, even fifty years ago—that the ordinary parent can do little directly toward teaching his child the arts and accomplishments of life. The average mother does not teach her daughter needlework or cooking to any great extent, and the average father does not and can not teach his son even the trade by which he earns his daily bread; the father works away from home and the son knows very little of his father's working hours.

The boy can learn from his father neither the fundamental principles of science nor their application in the arts of active life. The father is better situated to teach his boy reading and penmanship than to teach him drafting, tool work, and science, because for the former neither apparatus nor laboratory is necessary. If taught at all, therefore, to ordinary boys, those last matters must be taught at school, where apparatus may be used by many in common and where pupils may be taught in classes. So long as it was held necessary to teach manual arts to pupils individually, they were taught at home if taught at all; but as soon as it was found that in tool work and in drawing pupils could be taught in classes as well as in history or arithmetic, the economy of manual training schools became evident.

It thus appears that while the idea of manual training has been the natural product of our advancing civilization, the method has come

through the experience of trade schools, though finally differing widely from methods employed in actual trades.

THE GROWTH OF BROAD EDUCATION.

It is interesting to take a general review of the course of development of our latest ideal of a broad education. Two hundred years ago the learned professions and the privileged classes were educated exactly to suit their supposed needs, and working people were not taught at all.

The former were educated for the church, the bar, medical service, statecraft, or for a life of ease and luxury in polite society; they needed literature, science (such as there was), history, art, and all the graces of speech. The latter had no apparent need of knowing how to read; their mission was to work. Later, as more and more pupils were sent to school, the programme of the privileged classes was adopted for all. The more unfruitful the system was the harder teachers worked to raise the standard of literary study and to emancipate pupils from the sway of "utility," with still more dismal results. Locke speaks of the "learned ignorance" of his day, and Buckle found that an education purely literary often did "more harm than good." He said that—

There is always a tendency to prefer those parts of literature which favor ancient prejudices, rather than those which oppose them, and in cases where this tendency is very strong the only effect of great learning will be to supply materials which will corroborate old errors and confirm old superstitions. In our time such instances are not uncommon, and we frequently meet with men whose erudition ministers to their ignorance, and who, the more they read the less they know.

This statement of Buckle brings into clear relief the evil of a one-sided education. There is an evident absurdity in taking a large majority of the children of any community and educating them as though in life they were to be chiefly concerned with literature and art and the luxuries of life, and not at all with labor and industry.

But this rests the claims of the new education too much on an economic basis. The demands for a broader and more complete education are no less strong on the grounds of intellectual and moral development. The average good citizen is called upon to exercise his judgment in regard to a hundred material problems where a knowledge of mechanics and industrial methods is as essential as that of reading and writing; and he is called upon to discriminate between right and wrong, between thrift and waste, between fitness and unfitness, in reference to countless matters of everyday concern, but which are wholly remote from the concern of the old-time schools. No man can be equipped to stand forth in the working world and to make the most of himself, as a leader if he is fitted for leadership, or as a follower if he is best adapted to following, without manual as well as mental training—without the development which comes from the simultaneous cultivation of all his powers.

Manual training, as an educational factor, owed its existence to a widespread conviction that the education of the schools had been dealing too exclusively with the abstract and the remote and not enough with the concrete and the present. The thought product of the school was too dim and uncertain, and the knowledge gained had no sufficient bearing upon matters of daily life. Consequently the pupil lacked mental vigor and clearness, and his school experience was deficient in practical elements. Manual training embodies preeminently the modern idea of substituting things for words, observation for printed description, and personal experience for the recorded experience of others.

So long as education was a privilege of the few, the monks and the nonlaboring classes, it was like that of the slave-owning Greeks of Plato's time—devoted to culture and the demands of good society. With the disappearance of human slavery and feudalism, with the decay of ecclesiasticism, with the substitution of the industrial spirit for the warlike spirit—such being both the cause and the consequence of the growth of the idea of universal education—the ideals of education have substantially changed. We are at last emancipated from the idea that is still supreme in the Orient, that education consists in learning what has been laid down by the fathers: that the canons of science, art, and religion are to be committed to memory, and that all thinking must conform; in short, that authority is supreme.

We can not be too thankful that that day is nearly past. It is no longer "authority for truth," but "truth for authority." We have learned that a dictum like that of Aristotle in regard to the constitution of matter may be accepted without serious question for a thousand years, and yet be utterly false. Neither age nor a large following establishes truth.

Americans do not sufficiently appreciate their vantage ground, in that they are largely free from that "tyranny of the ancients" which has so oppressed Europe and Great Britain. Here it requires no special moral courage to assert that education must touch modern life more closely; that the utilities have changed; that while the need of intellectual development is ever the same, the curriculum by which such development is secured should always be adapted to social and industrial conditions.

With this consciousness of freedom comes the almost universal wish to incorporate new elements into the school work. If schools are to be suited to the demands of all people; if they are going to educate artisans as well as artists, mechanics as well as scientists, craftsmen as well as merchants—without pretending to know which shall be which—the general plan must be exceedingly broad. All the fundamental elements must be included. It must never be true, as it was declared to be true twenty years ago, that "our system of education trains boys, not to become craftsmen, but to be unwilling to be put to any

kind of craft." Our schools must equally lead to all developed and progressive occupations, and equally attract all classes.

With notions like these on every hand, no one can with confidence point to the first *advocate* of manual training.

Many recent writers and reviewers appear anxious to establish the antiquity of manual training, as though age were needed to make its claims valid. Others strive to show that it is an imported article. It is easy to quote what people have said in all ages in favor of the underlying ideas of manual training, but when one asks what was done in the way of such training, one generally finds only trade work and ordinary manual labor sandwiched in with more or less attention to books.

The world is much indebted to Locke, Rousseau, Comenius, Bacon, Pestalozzi, and Spencer for correct ideas in regard to education, but the problem whose solution is presented in manual training was: How shall this "education to things," as Emerson puts it, be given? Hence, without further consideration of the motive, let us proceed to show how the form of manual training developed.

No sooner were trade schools established in France and Belgium and Germany than it was found that drawing, mathematics, and elementary science must enter, too, to secure the best results. To be sure, these new features entered at a minimum and the trade work at a maximum, but they gained recognition. The product of trade schools was of course trade workers, such as lock makers, box makers, basket makers, weavers, dyers, instrument makers, cabinetmakers, etc., workmen of a high grade and great efficiency; but it was soon seen that such training had a universal value; that the mental fruit was as good as the manual, and that the broader and more fundamental the tool training was, the greater was its special as well as its general value.

Otto Cygnaeus devised for the primary schools of Finland a simple species of manual training as early as 1858, and in 1866 it was by law "made obligatory in all the primary and normal schools." Cygnaeus credits Pestalozzi and Froebel with the ideas underlying his introduction of hand work. Froebel taught that the child, "as a productive being, must be educated from the beginning to self-activity and productive energy. He must thus be educated through work to work." Cygnaeus supplemented the "gifts" by giving to the older children such kinds of handiwork as have for their aim the training of the hand, the development of the sense of form, and an æsthetic feeling, and which should be useful in every walk in life. "Such exercises are: Simple joinery, turning, basket making, etc. But all these kinds of work must not be conducted like a trade, but always with strict reference to the universal educational aim, and as a means of formal education."

Sweden claims to have had some form of sloyd for forty years, but it appears that Sweden is much indebted to Finland for the idea of liberalizing hand work as an element of general training; and that the practice of working from drawings (which were originally wanting in sloyd) was imported, possibly from France.¹

Whether the Russian Della Vos, director of the Imperial Technical School at St. Petersburg, got his idea of tool analysis from Finland (as some assert) or not, it is clear that the first suggestion of the correct method of tool instruction which America received from abroad came in the report of Della Vos, as published by him in 1868. What is now known as the "Russian method" of tool instruction consists in a series of exercises based upon and accompanied by an analysis of three things—the tools, the materials, and the elements of construction.

If we add to this basis of three things a fourth thing, viz, the boy himself, his physical and mental condition, we have the sufficient basis for both the method and the content of American manual training.

It is assumed that the forms of tools are the product of evolution, being the result of the best thought and the highest skill. Each tool has its functions and its correct methods of use. Again, each material has its characteristics, its limitations, its weak and its strong sides. These must all be brought out, contrasted, and compared. Thirdly, construction consists chiefly in methods of combining pieces; hence joints, unions, and fittings constitute the chief elements. To a subordinate extent individual parts are to be shaped or modeled in accordance with the laws of simplicity, strength, and beauty. Finally, the muscular strength of the boy's hand and arm, and his ability to be accurate, to be logical, and to be provident, must be duly considered.

This comprehensive analysis, which is strictly educational in character, must of course be followed by a logical arrangement of steps in which each feature is emphasized, and in which progress is always from the simple to the complex.

In this way for the first time tool work is brought within the realm of systematic education. Before this analysis was reached, one learned what he could of tool work while helping to build a house, construct a locomotive, shoe a horse, or make a piece of furniture. There was no theory, and no one ever thought of mastering tools and materials except incidentally while engaged in some form of manual labor.

The writer does not hesitate to characterize all tool teaching by the old method of putting the learner at once upon commercial work as unscientific and uneducational, whatever may have been the result in individual cases. Manual training has encountered no more serious difficulty than that of convincing "practical" men that the theory and

¹ The eminent service of Dr. Solomon, of Naas, in modifying the sloyd exercises and in giving to them a universal character suited to elementary manual training, is widely recognized.

use of tools can be taught successfully otherwise than by the good old method of "going into a shop and going to work."¹

It is obvious that tool work as thus analyzed and arranged admits of class teaching as readily as mathematics or Latin, provided the teacher has the proper appliances.

It is thus seen that the "Russian method" should receive full credit for cutting the Gordian knot which bound all the tool crafts down to an unscientific method of training. At the same time Americans may claim the credit of having half worked out the same solution before hearing of Della Vos, and of quickly putting it to general educational use. The Imperial Technical School of St. Petersburg trained only government engineers. Students entered at the age of 18 years. The course of training covered six years, three years while mastering the elements and three while applying them in government shops. There was no thought, apparently, of offering such training to students in general or to younger boys. The credit of giving manual training to boys of 14, and even younger, as a feature of general education, distinctly belongs to America.

The Russian educational exhibit at the Centennial Exposition (1876) contained a full account of Della Vos's work and sets of models to show how tools were analyzed and used. The great work of President John D. Runkle, of the Massachusetts Institute of Technology, in publishing a full report of the Russian exhibit in the fall of 1876, and the establishment of tool instruction in the Institute at Boston in 1877, substantially on the Russian plan, is freely acknowledged by all. He epitomized the Russian system as "Instruction before construction." He declared that "The trades are many, the arts are few." Said he: "Making the art, and not the trade, fundamental, and then teaching the art by purely educational methods, is the Russian system." Dr. Runkle gave an exposition of the Russian method of tool instruction at the meeting of the National Educational Association in Louisville, Ky., in 1877.

While President Runkle in the shops of the Massachusetts Institute was successfully applying the new method of tool instruction, by his chipping and filing and forging classes, between the years 1877-1880, the Industrial School Association of Boston, under the presidency of Rev. George L. Chaney, was developing the art of using woodworking tools in a very significant way. Prof. Channing Whittaker, Mr. George H. Chapman, Mr. D. T. Kendrick, and others, all of Boston, joined in preparing, testing, illustrating, and elaborating a "Manual" containing a series of 14 lessons for beginners in woodwork. This "Manual" was published by Ginn & Heath in 1881, and was doubtless the first

¹The writer recalls the cheerful prediction of a well-known St. Louis manufacturer, that the manual training school, with its "fanciful way of teaching," was destined to "do a great deal of harm;" that "you can't make a workman without sending him into the shop, among workmen, and making him put in his ten hours a day."

manual training work published in America. Its value and influence have been abundantly tested in many places by teachers and writers.¹

But it would appear that the class of the Industrial Association and other classes in and near Boston, organized on the basis of those early lessons, failed to perpetuate themselves. The reason is not far to seek. The tool work was all or nearly all that was taught. No drawing worthy the name accompanied it, throwing light and receiving light in return. No science and no mathematics stimulated a taste for the elements of construction, while reciprocally profiting by the clear-cut mental pictures which were formed in the shop. Wherever manual training has taken permanent root and exhibited a healthy growth it has combined drawing and tool work, and carried on both simultaneously with theoretical work in the allied branches. The moral of this lesson is easily drawn.²

¹While thus speaking of early influences favorable to the idea of manual training the writer desires to give credit to several prominent educational workers and writers. Supt. J. P. Wickersham, of Pennsylvania, took advanced ground as to the duty of the public schools. He said:

"It is high time that something should be done to enable our youth to learn trades, and to form industrious habits and a taste for work.

"It is not enough to instruct a boy in the branches of learning usually taught in our common schools, and there leave him. It must be seen to by some authority that he is allowed a chance to prepare himself to earn a livelihood. It takes more than a mere knowledge of books to make a useful member of society and a good citizen. The present product of our schools seems to be, in too great a degree, clerks, bookkeepers, salesmen, agents, office seekers, and officeholders. We must so modify our system of instruction as to send out instead large classes of young people fitted for trades, for business, and *willing and able to work.*"

At the same time he felt that we should not follow the trade schools of Europe. He would have the instruction scientific and thorough, but he did not believe the commercial shop was the thing for the school.

Prof. Robert H. Thurston (now of Cornell University), in a report of a committee to the legislature of New Jersey in 1878, strongly advocated the establishment of schools in which should be particularly and thoroughly taught the mechanical principles which underlie the industries.

Mrs. Spencer (then Miss Anna C. Garlin) wrote:

"Let the child be taken to school whole, instead of in parts; let him be considered to have a body as well as a mind; let him be trained physically toward use by a wise shaping of the eager animal activity; let him be protected from the cupidity of manufacturer and the pressure of home poverty by utilizing the active energy which in more primitive times was of so much account in the family economy; let him be gradually introduced into that hard world of work for which he is destined, by a training which shall be of the hands as well as of the brain. * * * If we are to protect the children of the very poor from the very worst consequences of their condition without making paupers of them or their parents, we must continue [after the training of the kindergarten] in some way to give them study and work together."

²The Worcester Free Institute, now the Worcester Polytechnic School, was opened for students in 1868 as a technical school, with a machine shop for students in mechanical engineering. Its pupils were all over 16 years of age, and the methods of tool instruction were those of ordinary commercial shops. Skilled workmen were engaged on contract work and the boys acted as assistants and apprentices. President Charles O. Thompson of the Institute never claimed to have any faith in manual training.

Meanwhile progress had been making on independent lines in Washington University, St. Louis. As early as 1872 a shop for tool instruction and tool practice had been equipped in the polytechnic department under the direction of the writer. Woodworking, lathe, forge, and machine tools were bought, and a large basement shop was equipped. Engineering students (of college grade) had practice here till 1877, when three separate shops were organized in an old dwelling house, and class instruction was given to college students and to students of a preparatory school. All this tool work was purely educational, having no commercial character.

In May, 1878, the writer of this paper gave an address on manual education before the St. Louis Social Science Association. The address gave a full account of the trade schools of Paris and the "Whitworth" scholarships in England. As indicating the nature and extent of the work which preceded the actual equipment of the manual training school, as well as foreshadowing its coming, the following quotations are made from that address:

For the last five years we have had a fair workshop, in which the students of this polytechnic school have worked to a certain extent. But only during the present year have we been able to work with much system. With the aid of our stanch friend, Mr. Gottlieb Conzelman, we fitted up during last summer a woodworking shop with workbenches and vises for 18 students; a second shop, for vise work upon metals, and for machine work; and a third, with a single outfit of blacksmith's tools. During the last few months systematic instruction has been given to different classes in all these shops. Special attention has been paid to the use of woodworking hand tools, to wood turning, and to filing. I have here two or three specimens of each lesson given to the different classes. The age of the students has ranged from 15 to about 22. None of the students have had much experience, and of course you can not expect nicely finished work. These specimens are not shown on account of the excellence of the workmanship, but because they illustrate our method.

The amount of time given to shopwork has generally been only four hours per week—two lessons of two hours each. The junior class in mechanical engineering gave eight hours. Shopwork has been done in the afternoon, and there has been no less work required in the morning recitations than formerly. Though four hours per week—which is equivalent to two days per month—seems too small an allowance to be of much practical value, four years would, on the present plan, suffice to give an excellent idea of the uses of all our tools, the properties of materials, and considerable manual skill. I have yet to hear from the parent who does not approve of our plan of shopwork. Our running expenses in the shop are now about \$100 per month; but we could, without perceptible increase of cost, double our present number of students. No extra fee has been charged on account of shopwork; but without permanent endowment this arrangement can not long continue. The experience of this year has been invaluable to us, and we are now clear in our conviction that a series of commodious instruction shops, well furnished with machinery and tools, and so liberally endowed as to require only a nominal fee from students, would be of inestimable value to the youth of this city.

The above address, published both in St. Louis and in New York City (Steiger & Co.), led to the establishment of the St. Louis Manual Training School as a subdepartment of Washington University on June 6, 1879. The funds were contributed, as they have been given ever

since, by private citizens of St. Louis. Over \$200,000 has been given to found and endow the school, only \$40,000 of which was by bequest.

This history would fail to be adequate should it not contain the names of those who in the early days had faith in manual training and who "proved their faith by their works." To Gottlieb Conzelman, Edwin Harrison, Samuel Cupples, William Greenleaf Eliot, Ralph Sellew, and William Brown the establishment of the manual training school was due.

Little need be added of the St. Louis school. It was opened in September, 1880. In consequence of the demand for more room, the plant was greatly enlarged in 1882. It accommodates 300 boys and its rooms are generally full. It is now in its fifteenth year, and its graduating class numbers 82 students. Its graduates number 560, a band of high-minded young men whose influence for education and culture and progress is strong. Their records are given near the end of this paper.

It is interesting to note how spontaneously and simultaneously manual training started at various points. In 1874 under the administration of President John A. Anderson, the Kansas Agricultural College introduced tool work as a required exercise for all its male students. There was, however, no industrial drawing, and only one teacher of shopwork previous to 1877, when the age of admission was reduced to 14 years. Since that date it has been virtually a manual training school with a four-year course of study and practice, including both agriculture and the mechanic arts. The educational war which waged in and around that institution during the year 1877-78 forms an interesting chapter.¹

During the year 1880-82 thousands of visitors inspected the St. Louis school, and its reports were sought from far and near.

The subject of manual training was presented quite fully at the meeting of the National Educational Association in Saratoga in 1882. A committee on industrial education made an important report; the committee consisted of Francis A. Walker, Boston, president Massachusetts Institute of Technology, chairman; M. C. Fernald, Orono, N. H., president Maine College of Agriculture and Mechanic Arts; J. W. Patterson, Concord, N. H., superintendent public instruction, New Hampshire; M. H. Buckham, Burlington, Vt., president University of Vermont; Prof. William H. Brewer, New Haven, Conn., Sheffield Scientific School, Yale College; William B. Weeden, Providence, R. I.; John S. Clark, Boston, secretary. They recommended as follows:

First. The introduction into public schools of proper appliances for the development of the sense-perception of pupils in regard to color, form, proportion, etc., by contact with models and with natural objects.

Second. The introduction into grammar schools of simple physical and chemical experiments, for the purpose of acquainting pupils, through original observation,

¹See "Columbian History of Kansas State Agricultural College," by Prof. J. D. Walters, pp. 25-27.

with the elements of chemical and physical science and their common applications in the arts.

Third. The teaching of drawing, not as an accomplishment, but as a language for the graphic presentation of the facts of form and of matter; for the representation of the appearance of objects, and also as a means of developing taste in industrial design.

Fourth. The introduction into grammar and high schools of instruction in the use of tools; not for their application in any particular trade or trades, but for developing skill of hand in the fundamental manipulations connected with the industrial arts, and also as a means of mental development.

In the discussion which followed this report there was little or no difference of opinion on the first, second, and third recommendations. The fourth was vigorously discussed, first by Mr. Clark, the secretary, who supported it by an able paper published in the proceedings of the American Institute of Instruction. The high ground taken by the committee is shown by this sentence taken from Mr. Clark's paper:

The industrial training should have no issue with the literary training. We have seen that both are needed in a sound course of mental training. Both are equally demanded by the social conditions of any highly organized community. That the purely literary training is not broad enough to answer as a higher educational training for those who are to enter our ever-expanding industrial employments, which demand in a high degree the applications of natural science and also of skilled labor, is a fact which can not be denied. To remedy this state of things secondary schools must provide a way to give broader instruction in experimental and theoretical science; and also in a generalized form, instruction in manual training, including the use of hand and machine tools, not in its application in any special trade or trades, nor as a training divorced from general intellectual culture, but as an essential part of a sound general education.

A brilliant discussion of the report was contributed by Supt. James McAlister, then of Milwaukee.¹ A single paragraph is quoted:

It is an egregious mistake to suppose that those who favor manual training wish it to take the place of mental training, or are seeking to deprive any class of pupils of the portion of intellectual culture they now receive. But I would like to know why the hand should not be trained as well as the head? The perfectly educated man is he whose facile hand follows obediently the clear and ready promptings of a well-developed brain. The hand is the most marvelous instrument in the world; it is the necessary complement of the mind in dealing with matter in all its varied forms. It is the hand that "rounded Peter's dome;" it is the hand that carved those statues in marble and bronze, that painted those pictures in palace and church which we travel into distant lands to admire; it is the hand that builds the ships which sail the sea, laden with the commerce of the world; it is the hand that constructs the machinery which moves the busy industries of this age of steam; it is the hand that enables the mind to realize in a thousand ways its highest imaginings, its profoundest reasonings, and its most practical inventions.

Remarks in support of the report were made by Dr. Larkin Dunton and Charles C. Coffin, esq., of Boston, and Professor Woodward, of St. Louis. Dr. E. E. White, of La Fayette, Ind., and A. P. Marble, of Worcester, opposed the report on the ground that it virtually contained

¹ Later superintendent of schools at Philadelphia and now president of Drexel Institute.

"the doctrine that the public school should cover the whole domain of education."

Said Dr. White:

This doctrine saps the very foundation of the public-school system, puts a magazine under it, and then lays a train out to fire it. The educator who does that can not blame the outsider if he fires that train, and the public-school system, in some of its important departments, is blown up before his eyes. He need not be startled at such a result, for he put the magazine under it.

Mr. Marble indorsed the position of Dr. White. Here are specimens of his reasoning:

He [Dr. Dunton] begs the question when he says that this boy must earn his living, and therefore he must have industrial training of an educational form. I say the boy must have his living; therefore he must have industrial education in some other form.

Now, the schools we have to conduct are to train boys and girls in those directions that are common to everybody, and one of the things that the boys and girls ought to learn in those schools is how to get information from books. There is no information stored up in the plow, hoe handle, steam engine; but there is information stored up in books. If a boy is prepared to get information from books, he can make indefinite progress. If you take out of his hand the books and put in there the handsaw and the hammer, and ask the teacher—who is most likely a young girl—to teach them, when she does not know anything about them, the whole matter will simply become "a bore" to all parties concerned. The saw is brought into the recitation room, and the teacher says, "Now, saw." It is a thing that does not belong to the school at all. It belongs outside, and ought to be attended to outside.

On the same day, by special invitation, it was the writer's privilege to read a paper on the "Function of a manual training school," setting forth the "Three methods of expression."

He claimed for these forms of expression, which he took pains to distinguish, more nearly equal care and consideration in the elementary education of every child. (1) Teach language and literature and mathematics, with a view to make each child a master of the art of verbal expression; (2) teach mechanical and free drawings with the conventions of shade and color, and aim at a mastery of the art of pictorial expression; (3) and lastly, teach the cunning fingers the wonderful power and use of tools, and aim at nothing less than a mastery of the fundamental mechanical processes.

To do all these things while the mind is gaining strength and clearness and material for thought is the function of a manual training school.

He indorsed the position of President Stephen A. Walker, of the New York school board:

Education of the hand and eye should go along with, *pari passu*, the education of the mind. We believe in making good workmen as well as in making educated intellects. We think these are things that can be done at the same time, and our proposition is that they can be done better together than separately.

He gave the daily programme of the St. Louis school, and referred at length to the aims, methods, and evident results of his school. The

address was published in the *Popular Science Monthly* and was widely read.

Dr. E. L. Youmans, in remarks upon the paper, emphasized the need of a form of education better suited to boys whose tastes and inclinations do not lead them to purely literary and abstract subjects.

Mr. L. H. Marvel gave an account of a class in carpentry in a public school in Gloucester, Mass., and Mr. James A. Page's report of an experiment in shopwork in the Dwight grammar school in Boston was read. Both experiments were regarded as successful.

President George F. Fairchild, of the Agricultural College of Kansas, took advanced ground as to the objects aimed at and as to the methods to be pursued. Referring particularly to industrial colleges, he said that they were "solving the problem of uniting intelligence with readiness in practical affairs." He said that the friends of manual education all agree in seeking—

to increase among students that respect for labor, that activity of hands, that sense of duty, that familiarity with details, that knowledge of ways and means and keenness of observation, so clearly perceived to be the proper end of such training. No one feels that the proper result is a human machine, wound up to its fourscore years with unvaried accuracy because its ways and motions have been regulated according to rule and routine. And yet the method sometimes proposed of driving a youth in haste to a trade and perfecting him in it by confinement does naturally result in just such machine workmen; and schools that adopt it do not utterly fail, only because they can not live up to their theory. Each pupil is looked upon as a whole human being, to be put in training that shall give a broader, not a narrower, ability.

The views expressed at Saratoga in 1882 have been given quite fully, because for the first time there was general interest in the subject, and because from that beginning waves of discussion swept back and forth across the land. It is not too much to say that the pioneers of manual training were in substantial agreement as to the complementary nature of manual training. It was to liberalize and enrich the curriculum of secondary schools, not to curtail and cripple it, as has been charged a thousand times.

During the year 1882 an article by Dr. Felix Adler, of New York, appeared in the *Princeton Review*, which greatly stimulated the general interest in manual training. The article called attention to a kindergarten and primary school¹ which had been in existence for five years, and which had applied the "creative method to the training of the intellect, to the development and refinement of the taste, to the formation of character." The primary school was an advanced kindergarten on a higher plane. The intimate relation between drawing and manual work with tools was constantly maintained, and there was an attempt to aid the children "to a clearer understanding of the elementary facts of mechanics."

¹ The Workingman's School, 109 West Fifty-fourth street, supported by the Society for Ethical Culture.

Dr. Adler placed great value upon the production of beautiful forms by the pupil as tending "to heighten his appreciation of what is beautiful and to refine his taste."

The following eloquent passage shows a profound insight into the moral influence of well-chosen manual work upon the pupil's character.

And now I would point out how the occupations of the workshop and the atelier combined tend to establish in the mind of the pupil an unselfish and impersonal standard of valuation which will prepare him admirably for the truer moral estimate of life. For days and perhaps weeks he labors to convert a formless material into a form illustrating mathematical truth or æsthetic harmony. He undergoes protracted toil and meets perhaps with many failures and disappointments in order to be rewarded at last by what? Simply by realizing in some degree that perfectness of the object which he aimed at from the beginning. His work is devoid of any pecuniary value. It is a mere typical form. Its worth consists in being true or in being beautiful. And a habit is thus formed of judging things in general according to their intrinsic rather than their superficial qualities. Gradually, and almost insensibly, the analogy of the work performed on outward objects will be applied to inward experience. A delicate sensibility to true and harmonious relations will be engendered, and the impressions thus obtained can later on be raised into convictions by direct moral instruction. The pupil, when of sufficient age, can be taught that in the world of thought and feeling, too, truth and harmony of relation are the sole ends to be sought. He can be exhorted to undergo similar toil, to be prepared for similar failures and disappointments, in order to realize at last something of the same inward perfection which is to be his only and all-sufficient reward. Thus while he is shaping the typical objects which the instructor proposes to him as a task, while he pores silently, persistently, and lovingly over these objects, reaching success by dint of gradual approximation, he is at the same time shaping his own character, and a tendency of mind is created from which will eventually result the loftiest and purest morality.

The success of the St. Louis school early attracted the attention of the Commercial Club of Chicago, and in 1883 the members of the club decided to establish a manual training school. They incorporated the school, and organized with E. W. Blatchford as president. The school opened on February 4, 1884, under the direction of Dr. H. H. Belfield. It is but proper to add that the manual training movement was started in Chicago by Col. Augustus Jacobson,¹ and his efforts in bringing the subject to the notice of the Commercial Club and to the public through the press were ably seconded by Mr. Charles H. Ham.

¹ The views of Colonel Jacobson on the subject of education were broad and original, as may be seen by this extract, written by him as early as 1874: "I should build schoolhouses, fill them with steam engines and machinery, and in them I would train young America, male and female, fully up to the present state of knowledge in everything there is to be known. The boy leaving school should carry with him mechanical, business, and scientific training, fitting him for whatever it may become necessary for him to do in the world. I would secure for society the advantage of all the brain capacity that is born and of all the training it can take. It is possible and practicable to let every child of fair capacity start in life from his school a skilled worker with the principal tools of all the mechanical employments, an athlete with the maximum of health possible to him, and thoroughly at home in science and literature. The child so trained would when grown be to the ordinary man of to-day what a racer is to an ordinary plow horse."

In 1883 the authorities of Baltimore decided to have a manual training high school, and on March 3, 1884, the Baltimore Manual Training School was opened, with Dr. Richard M. Grady as principal. Dr. Grady had already spent three days in an examination of the St. Louis school, and Professor Woodward had by request given an address before the city government of Baltimore on the work of his school. In his efforts to organize the school Dr. Grady was greatly encouraged by President Gilman, of Johns Hopkins University. Baltimore was thus the first to establish a manual training school as a part of the public school system.

In June, 1883, the first class graduated from the St. Louis manual training school. The event was one of great interest and the reports of the proceedings were widely copied. The following extracts from the director's report is significant as taking for granted a high intellectual and moral aim and the absence of low and sordid motives:

Our exhibition to-day is not limited to a display of drawings, shopwork, and manual skill; we have had recitations in algebra, geometry, natural philosophy, chemistry, Latin, history, and English composition. In thus arranging our programme, I have recognized the fact that nearly all persons admit the entire practicability and reasonable success of all the manual features of our school. The theory and the use of tools are as readily taught as arithmetic or Latin. But the question has remained in many minds, particularly among teachers: "Do the pupils of a manual training school prosecute ordinary school work with an interest and success equal to that observed in other schools?" They ask: "Does not the interest which these boys manifestly take in their tool work, in fact and of necessity, diminish their interest in and love for their books?" This is a natural inquiry, and some of our shrewdest visitors of late spent considerable time in our recitation rooms searching for an answer to this question. Those of you who have listened to recitations in this school may be prepared with an answer. The testimony of our teachers is very pertinent here. They all say that these boys do better work than do boys of the same grade without the stimulus of the manual training.

My own conclusion, based upon the observation of the influence of manual education for at least eight years, is that not only does our workshop not detract from the interest boys take in books, but it stimulates and increases it, either directly or indirectly. In mathematics, physics, mechanics, and chemistry the help is direct and positive. Note, for instance, the mental arithmetic involved in the execution of a pattern from a working drawing. No one can learn from a book the true force of technical terms or definitions nor the properties of materials. The obscurities of the text-books (often doubly obscure from the lack of proper training on the part of the author) vanish before the steady gaze of a boy whose hands and eyes have assisted in the building of mental images. No classes in physics or chemistry were ever so ready to illustrate their text-books.

Then on the literary side the habit of clear-headedness and exactness in regard to the minor details of a subject, which is absolutely essential in a shop, stretches with its wholesome influence into their study of words and the structure of language. As Felix Adler says, the doing of one thing well is the beginning of doing all things well. I am a thorough disbeliever in the doctrine that it is educationally useful to commit to memory words which are not understood. The memory has its abundant uses, and should be cultivated; but when it usurps the place of the understanding, when it insidiously beguiles the mind into the habit of accepting the images of words for the images of things the words ought to recall, then the memory becomes a positive hindrance to intellectual development. The influence of manual training when associated, as it is here, with mental culture is intellectually and morally wholesome.

The subject of manual training was discussed in June, 1883, at the Missouri State Teachers' Association, at Sweet Springs, by Dr. S. S. Laws and the writer. After the exposition of its needs, methods, and aims, Dr. Laws vigorously asserted that there could be no such thing as general training in the use of tools; there were, he declared, no fundamental principles. And again he took the position that whatever energy or strength was absorbed in manual training exercises with tools was just so much energy withdrawn from mental culture.

An analysis of mechanical processes furnished a ready answer to the first charge, and the success of the St. Louis school during three years was generally accepted as an adequate reply to the second.

Again, in July, 1883, at Saratoga, before the National Educational Association, the results of experience were presented by the writer under the title of "The fruits of manual training."¹

This address, somewhat abridged, was printed in the Popular Science Monthly, and later inserted in the writer's book, *The Manual Training School* [D. C. Heath & Co., Boston].

At Saratoga, in 1883, for the first time, a full exposition of the drawing of a manual training school was made.

The most notable event connected with the progress of manual training in 1884 was the exposition of school handiwork at Madison, in connection with the meeting of the National Educational Association. Besides illustrative exercises in drawing, wood, and metal work from four engineering schools (Purdue University, Wisconsin State University, Massachusetts Institute of Technology, and Illinois State University), the St. Louis Manual Training School showed work done by all its classes. This was the first exhibit, side by side, of work done by engineering students on the one hand and on the other by students some three years younger from a preparatory school. Dr. W. T. Harris voiced the feeling of many in his report on the exposition when he said:

It is not necessary, as some think, to introduce manual training into the common school. What we want is the manual training school side by side with the high school as an independent institution for the preparation of youth for their vocation.

Among the papers of the association for 1884 is a spirited defense and advocacy of manual training by Col. Augustus Jacobson. He said:

The manual training school has come and it has come to stay. For purposes of industry men will abandon the manual training school method when they abandon the locomotive and go back to the stage coach.

It is said that if a boy learns the use of tools he will necessarily follow the pursuit of a mechanic and thereby be debarred from rising in the world. Many men are kept down in the world by ignorance and want of skill, but I have never yet seen any man, or heard of any man, who was kept down by knowledge and skill.

To say that to teach a boy the use of tools will force him to become a mechanic is like saying that if I have my boy taught to dance he must become a dancing mas-

¹An industrial section of the National Educational Association had been organized the year before and Dr. Woodward had been selected as president. The address referred to in the text was regarded as his inaugural.

ter; if I have him taught to fence, to box, to skate, he must earn his bread by these accomplishments; if I have him taught to ride he must become a cavalryman or a cowboy. The manual training school educates boys, not to become mechanics, but to become men of intelligence and skill. It educates them so that they may have open to them a wider field of employment than they could have in any other way. It educates them so that they may have open to them all employments.

It is but proper to add that in the discussion following Colonel Jacobson's paper President C. O. Thompson, of Rose Polytechnic, Terre Haute, Ind., strongly opposed anything like shopwork outside the technical schools. Any school attempting to put shopwork into general training was, or soon would be, in a "moribund condition."¹

The year 1884 was marked by the opening of the manual training schools in Chicago, Baltimore, Toledo, New York City (College of the City of New York) and at Gramercy Park (the last under the direction of Mr. Courtlandt Palmer), at Eau Claire, Wis., and a certain amount of woodwork was organized in the schools of Boston as a sort of experiment for grammar-school pupils.

The Toledo movement seems to have been inspired by Mr. E. A. Macomber, and to have been seconded by Messrs. William H. Scott and Frank Scott—the three forming the board of trustees of Toledo University. The funds of the University were in trust for educational purposes, and the trustees decided to cooperate with the school board of Toledo and erect an adequate building adjoining the city high school, to be known as the Scott Manual Training School. The trustees maintain the manual features (shops, drawing, cooking, and needlework), so that the pupils of the city high school have free manual training.

In connection with the movement in Toledo the lively interest of ex-President Hayes was remarkable. He presided at the conference signalizing the opening of the Scott Manual Training School, at which addresses were made by Dr. Felix Adler, Colonel Jacobson, Mr. C. H. Ham, Mrs. Ewing, of Iowa, and Professor Woodward, of St. Louis.

After some experimenting in tool instruction, Girard College, in Philadelphia, started regular class metal work in 1884, and has maintained it and woodwork (started some two years later) until the present time.

In September, 1884, the Pennsylvania Agricultural College organized manual training on regular lines and maintains it still in a very complete manner.

The Miller Manual Training School, munificently endowed by Samuel Miller, was opened for young children in 1878, at Crozet, Albemarle County, Va., and systematic tool instruction for advanced pupils was developed about the year 1884.

¹A particular school at Komatau, in Bohemia, much like a manual training school, which Professor Thompson said was in a "moribund condition," was found by the writer the next year (1885) in a very flourishing condition. In consequence of its success eight similar schools had just been established in Austria. It was Professor Thompson's remark about the Komatau school that particularly led to the visit the following year.

The Hebrew Technical School for boys of twelve years and upward was opened in 1884 in the city of New York. Dr. J. M. Leipsiger was the able and enthusiastic director.

The progress during the year 1885 was steady. In Cleveland, Ohio, in February, 1885—

a small carpenter shop was started in a barn situated on Kennard street, near Euclid avenue, for the benefit of some boys, then pupils in the Central High School. Through the diligence and enthusiasm of those boys the little school and the value of manual training were brought to the notice of some of the business men of the city. One or two meetings were held, at which the question of the establishment of a manual training school in Cleveland was thoroughly discussed. It was decided to form a stock company with a capital of \$25,000, with which they were to erect and equip a building and then charge a tuition fee just sufficient to cover the running expenses.

The Cleveland Manual Training School Company was incorporated June 2, 1885, for the purpose of "promoting education, and especially the establishment and maintenance of a school of manual training, where pupils shall be taught the use of tools and materials and instruction shall be given in mechanics, physics, chemistry, and mechanical drawing."

The school was opened for pupils early in February, 1886. Soon after this, on petition of the board of education, the State legislature passed an act authorizing the city of Cleveland to levy a tax of one-fifth of 1 mill for manual and domestic training purposes. This tax amounts to about \$16,000. The incorporated company owning the building gave the board of education the free use of this building, machinery, etc. Tuition is now free to public-school pupils.

The organizer of the movement in Cleveland was Mr. Newton M. Anderson, who had already spent two or three days in St. Louis studying the methods of manual training.¹

In September, 1885, the Central Manual Training High School of Philadelphia was opened with 125 pupils. In three years the number had increased to 325.

During the year 1885 it was the writer's privilege to visit the schools of England and Europe. The special inducement to the trip was a formal invitation to present the subject of manual training schools at an educational conference in Manchester, England, on September 14, 1885. Beginning at Manchester, he devoted nearly three months to the study of technical and industrial schools. In Manchester he gave three public addresses upon the theory and methods of his own school, with such statements of results as the records would warrant. The subject was thoroughly canvassed by the managers of the Manchester Technical School, the result being that a manual training department with a complete curriculum was opened in September of that year.²

¹Mr. Anderson is now at the head of the University School for boys in Cleveland.

²A visit to this school in 1892 shows continued progress and development.

Trade or industrial schools were common in all manufacturing towns, such as schools of weaving, dyeing, spinning, drawing, and metal work, but there were few schools for general culture which included tool work. A small school at Glasgow, under Dr. Dixon; another at Sheffield, under Professor Ripper, and Finsbury College in London, were the only ones he found. The last named had been started in 1883 on lines laid down by Philip Magnus (since made Sir Philip for distinguished service in the cause of technical education), and was in excellent condition. Its largest attendance, however, was in the evening, and it was much cramped for room; "class instruction" in tool work was quite impossible.

In Paris there was great zeal for manual training in the lower grade schools. Much of the work was, however, premature and not sufficiently related to drawing. The instruction was largely individual, and the results achieved were not very satisfactory. The Rue Tournefort School, already famous for its excellent management and general character, was exceedingly interesting. The clay modeling was worthy of wide imitation. While the drawing of decorative forms is essential to a complete course in drawing, its influence in creating a love and appreciation of beauty is greatly inferior to that of modeling the forms themselves. The natural criticism of the Rue Tournefort School was that its curriculum was too exclusively manual—i. e., not sufficiently academic (literary and scientific).

At other schools for older pupils, such as the Apprenticeship School for Arts and Trades, and the Trades School on the Boulevard de la Villette, tool work of several kinds was carefully taught, though relatively little attention was paid to drawing and academic work. The trades were strictly taught. After a few weeks of general experience in the round of shops, every boy was required to select his trade and devote himself exclusively to it. The schools turned out considerable commercial work.

In the Netherlands, in Germany, and in Switzerland, he found trades taught with the very definite object of fitting young men, and sometimes young women, to undertake trade work.

The writer is free to say that while European industrial schools had much of suggestion in regard to the capacity of pupils for manual work, and of their enduring interest in it, they suggested to him no improvement in his methods of instruction, and very little in regard to the scope of his work. On the contrary, they exhibited a narrowness of purpose and a crudeness of method which ought by all means to be avoided. With the exception of some of the primary schools of Paris, he saw no pupil in an industrial school who was not there to learn a trade. The general educational value of manual training for pupils who might not become craftsmen was not recognized in any school.

Such was the state of things in 1885. Great changes have taken place in Europe during the past nine years, but it is a historical fact,

which some appear reluctant to admit, that manual training, as we in America understand it, was not imported from any country.¹

During the year 1885 the discussion of manual training was general throughout the country. Friends and foes were found in every community, and though much misconception prevailed, correct notions gained ground rapidly.

On December 16, 1885, by invitation of Governor George D. Robinson, of Massachusetts, the mayor and the superintendent of schools of

¹It is very commonly assumed that manual training came from Germany, but the assumption is false. We have learned much from the Germans, and the obligation is gratefully acknowledged, but the manual training school did not come from there. This the Germans know themselves very well. They shall speak for themselves and this decision shall be final.

Prof. Kuno Franke, of Harvard University, in 1886 wrote as follows in a letter to a German paper:

"Since the days of Rousseau, the effort to educate the rising generation in a more harmonious way than is possible in a school which aims only at the acquisition of mere scholarship has never been abandoned. The emphasis which the followers of Basedow laid upon the gain of useful knowledge; the thought of Pestalozzi, that the first step in education consists in the schooling of the will, while mental discipline must be treated as something secondary; Father Jahn's gymnastics; Froebel's successful attempt to develop reason through the cultivation of the senses; and, finally, the measures which have led to the establishment and growth of the polytechnic school—all these manifestations are still only symptoms of the one fundamental idea, that education must be directed, not to know, but to be able to do; not to words, but to deeds.

"It appears to me that nowhere yet has this idea reached such a methodical expression as in the Manual-Training School of St. Louis, which, unlike our German trade schools (in which only one craft or occupation is taught to artisans), appeals to the whole community, and aims at general pedagogical objects."

Prof. F. Anton Hubbach, director of the clockmakers' school at Furtwangen, Baden, Germany, who came to America to visit the World's Fair in 1893, paid Louisville a visit for the express purpose of inspecting the means and methods of the manual training school in that city. He writes:

"The classes were taking their regular course of study, and I thus had an opportunity to gain an insight into the matter and method of instruction. I had already become acquainted at the World's Fair with the existence and character of similar institutions, but it remained to a personal visit to the school here to gain for me a knowledge of the purpose of such schools. As I myself have for years been at the head of a large school for theoretical and practical education, I may be in a position to judge of the difficulties with which the founding and conduct of such schools are attended. I am sincerely pleased that I am able to add an account of this school from my own inspection to the account of my travels, and it is my wish to see such schools also built in Germany."

President Charles De Garmo, whose life in Germany entitles him to speak with authority, in the discussion before the National Educational Association in 1886 contributed a statement which bears upon the question of the origin of manual training.

He said that for a hundred years German girls had been taught cooking and housework, but that "Germany has no manual training for boys as an element of public school education. There are, indeed, a few private eleemosynary institutions (trade schools) established for the poor and vicious boys, but none in general."

This testimony ought to settle the fact that however much Germany may have approved the idea, it has not even yet realized it to any great extent.

Boston, Gen. Francis A. Walker, Hon. John W. Dickenson, William T. Harris, John S. Clark, and others, Dr. Woodward gave a public exposition of manual training in Huntington Hall, Boston.¹

The lecture was published in full in the Boston Herald of December 17.² Its character and influence may be inferred from the following extract from the Herald editorial of December 18:

MANUAL TRAINING.

Dr. Woodward's lecture on manual training, which we presented in a very full report yesterday morning, claims more than transient value. It is a notable contribution to the literature of practical education. The style of the address is excellent, and the matter is entirely worthy of the form. The lecture merits careful study, and should receive it from all who take an interest in the training of our youth and the joint development of the powers of the mind and hand.

On the platform Dr. Woodward showed himself the master alike of his subject and his audience. By his lucid and eloquent presentation of the method and advantages of the new system of education he held the attention of the hearers to the end. He gave a succinct description of the course of instruction followed under his direction at the St. Louis manual training school, and pointed out that intellectual education far from being eclipsed, or even overshadowed, is accorded a preponderant share in the system.

Dr. Woodward meets the objections urged against manual training point by point. In doing so he brings out very clearly as the fundamental distinction of the new system, that it aims, not at the production of a high degree of manual skill in a narrow field, but at continuous mental discipline. The range of its manual instruction is so wide that the stage of mechanical habit is never reached in any of the branches. The student never becomes an automaton. "No blow is struck by him, no line drawn, no motion regulated by mechanical habit. This stage is never reached. The only habit acquired is that of thinking. The quality of his every act springs from the conscious will, accompanied by a definite act of judgment." It is the object of the St. Louis school to turn out, not boys who have been specially trained in one mechanical line to the exclusion or, at least, to the neglect of the other lines, but evenly trained boys, with a broad foundation of serviceable knowledge, upon which they can readily build whatever superstructure of expertness may be required by their future career.

Following the above address there was a banquet given by John S. Clark, esq., of Boston, which was attended by some seventy educators from the Eastern and Middle States. In his remarks Dr. Woodward gave utterance to the epigram about educating the whole boy. Said

¹The circular announcing Dr. Woodward's lecture said:

"The subject of manual training is not new in Boston. The idea may be said to have originated here; but while we have been discussing it and making experiments in a few directions, other communities have gone forward and built large schools, and established its practicability and educational value beyond question. The citizens of St. Louis took the lead in this matter, and in 1880 a manual training school was established under the auspices of Washington University. This school has been a great success from its outset. So satisfactory have been its results that manual training schools have since been established at Chicago, Baltimore, Toledo, and Philadelphia. Much of the success of the St. Louis school is owing to the fact that its course of study harmoniously combines intellectual training with the use of tools.

²The lecture was published in pamphlet form early in 1886 by the Social Science Association of Philadelphia.

he: "My educational creed I put into six words: Put the Whole Boy to School."

The after-dinner speeches of ex-Governor Alexander H. Rice, of Boston, and Supt. James McAlister, of Philadelphia, were features of the occasion.

During 1886 favorable reports were received from all manual training schools, including several new ones. Cleveland, Omaha, New Orleans, Cincinnati, New Haven, Denver, and many smaller places reported cheering progress, and in all quarters there were discussions of the educational and the economic value of manual training. The Tulane High School of New Orleans was organized by Prof. J. M. Ordway; in Omaha manual training was put into the high school by Supt. H. M. James; in Cincinnati the movement was started and directed by Mr. F. W. Robinson; Supt. S. T. Dutton (now of Brookline, Mass.) inaugurated the work in New Haven.

The council of the National Educational Association, at its meeting in Topeka, in July, 1886, discussed the "Pedagogic value of the school workshop." The general attitude was one of inquiry, while two members who had reached the stage of conviction were clearly of the opinion that the educational value of the shop was small, and that its use should be limited to schools for the training of mechanics. Dr. E. E. White doubted the general value of tool instruction. He suggested that military drill might give better physical results, and stated:

Three per cent of the working people of the country can produce all the wood-work needed. The school workshop can not touch the life work of over 10 per cent of the pupils. The manual training school must take its place as complementary to the public school—as a special school, like the law school.

Dr. S. H. Peabody did not "discern such valuable results from hand culture as his friends seem to find." Said he:

"I do not find that the exact construction of a box leads to the exact construction of an English sentence, but that mechanical students need as much drill in writing as any others. I have not found that the students in mechanical courses were especially good in their mathematical work, etc." Dr. Peabody argued that, "Skill in one tool does not beget skill in the use of another." (Council proceedings, 1886, pp. 55-58.)

The year 1886-87 was characterized by great activity in educational centers in behalf of manual training. The industrial associations of New York and Philadelphia fostered investigation and discussion and published papers and reports. The college for the training of teachers, organized in New York, included manual training as a prominent feature in its course of instruction. In an address in New York in the winter of 1886-87, President Gilman, of Johns Hopkins University, well stated the object of the association:

I think it most advantageous that, just at this epoch, when all over the land there are efforts making to introduce manual training, a society has been formed in New York to collect the experience of this and other lands, to furnish actual examples of classes organized for discipline in handicraft, to build up a library, to provide lectures, to print reports and papers, and to diffuse in many ways sound ideas.

In February, 1886, Dr. John W. Dickenson read a paper in Washington, before the superintendents' section of the National Educational Association, on "The province of the public school," in which he weighed the subject of manual training and found it wanting. He allowed it very small educational value, being as he thought largely imitative and unnecessary in view of the development of laboratory methods in science. He considered its economic bearing as beyond the proper province of the public school. The schools "must not be confused and burdened with work of the home, or of society, or of the church."

Supt. W. B. Powell, of Washington, and Supt. H. W. Compton, of Toledo, showed no sympathy with such views. They announced the success of manual training at their homes; they regarded its demand by the people as legitimate, and they asserted its eminent educational value.

In the spring of 1887, Dr. Woodward issued a book on the "Aims, Methods, and Results of Manual Training" under the title, "The Manual Training School" (D. C. Heath & Co., Boston.) Mr. Charles H. Ham, of Chicago, had already brought out his book on "Manual Training" (Harper & Co.), in which, with great force and dramatic power, he had set forth the character and mission of manual training as illustrated by the Chicago school.

At the Chicago meeting of the National Educational Association in 1887, manual training was fully discussed. For the first time, it was felt that the vast membership of the association was friendly to the movement. Papers were read before the general association by President Walker, of the Massachusetts Institute of Technology; Miss L. A. Fay, of Springfield, Mass., and Dr. Woodward, of St. Louis. General Walker pleaded earnestly and powerfully for manual training for all boys and girls above 12 years of age in all urban communities. He pointed out the fruitlessness of much that pupils are required to do, and the essential one-sidedness of standard methods of training. Said he:

It is little less than a shame that we should graduate from these (high) schools pupils who are highly accomplished in language, composition, and declamation, but are less keen in perception, with less of visual accuracy, less of manual dexterity, less of the executive faculty than the children of the ordinary ungraded district school.¹

¹ This paper was not published till March, 1887.

² Six weeks after the above words were uttered, Wm. Mather, esq., M. P., read a paper on manual training before the British Association in Manchester, England, in which he said: "It is of secondary importance, after reading and writing have been acquired to serve as useful instruments, to pursue systematically the study of grammar, language, and literature, analysis of sentences, refinement of composition, elegance of expression, and remote historical events. Knowledge of these subjects increases with the pursuit of all other knowledge, and especially in the study of art and science; for exact expression and definition and even grace of language are inculcated by familiarity with the forms of beauty, and the laws of nature and their operations." He emphasized the importance of giving the girls training in needle-work and cooking.

Miss Fay outlined and illustrated a course in drawing and tool work for pupils from 9 to 18 years of age. Her references to her own experience as a teacher and investigator in tool work were enthusiastically received by the audience.

Dr. Woodward claimed that the proper function of the public school was much broader than was shown in the ordinary high school.

The welfare of the community (which means the welfare of the individual members) demands that boys be so trained that they may all become intellectual and efficient workers. The training of the many, not the culture of the few, should be sought. The manual training school is better than the home, far better than the commercial house or shop, far better than a trade school or the street, for the all-round education of a boy. He closed thus:

Let us not fear to build our own house. The age demands a new school. Neither Babylon, nor Athens, nor Rome, with their pinnacles of culture resting on the barbarous foundation of human slavery, nor the aristocracies of modern times—none of these can teach us how to educate, construct, and adorn an American citizen. No narrow, selfish aim, no prejudice of caste, no false claim of high culture must mislead us. Give all our boys a generous symmetrical training; open wide the avenues to success, to usefulness, to happiness, to power, and this age of scientific progress and material wealth shall also be an age of high intellectual and moral attainment.

A long discussion followed, which, with one exception, showed faith and a growing appreciation of manual training as a feature of general education. General Walker closed the discussion by expressing "his profound gratification at the manner in which the teachers of the United States had met and treated the subject."

The foundation of Pratt Institute in Brooklyn in October, 1887,¹ was an educational event of the first importance. Although this is chiefly an art and trade school (as the manual training school is the smallest of its departments), yet its pure, broad, educational spirit is admirable in every way. This splendid institution is a worthy monument to a noble man.

The years of 1888 and 1889 witnessed the culmination of the controversy for and against manual training.

At the superintendents' meeting in Washington, February 14 to 16, 1888, Mr. Charles H. Ham presented a paper advocating the general introduction of manual training into the public schools. Being a layman, he did not discuss the practical working of manual training in the school programme, but devoted himself to showing the shortcomings of the existing school, and the need of the new element.

Supt. A. P. Marble, of Worcester, followed by a long essay, defending the school from the charge of failure, claiming that the popular demand for manual training rested upon a false estimate of what pupils know, and of what schools are doing. He said that the demand for manual training was "based on a fourfold claim of gymnastics, handicraft,

¹ By Charles Pratt, a wealthy merchant of New York City.

educational necessity, and general welfare, this claim having a fatal lack of unity. "It is also my opinion," said he, "that this demand does not proceed from those who are most concerned, i. e., the parents of the children."¹

He argued that manual training would produce materialism; that its introduction would "cost an enormous sum;" and finally, that when introduced into existing schools it had failed.²

Superintendent Marble's conclusion was that "manual training should not be engrafted at all. It ought to be provided in special schools as they are needed and can be afforded." Dr. Nicholas Murray Butler replied that he had seen manual training engrafted with entire success. It no longer asked admission as a favor; it demanded it as a right. Referring evidently to Mr. Marble's paper, he declared that "the subject is both too pressing and too important to permit us to spend time in wandering off to fight duels with windmills or with the creatures of anyone's imagination."

Dr. Belfield, of the Chicago manual training school, maintained the broad general value of manual training, and insisted that it was the parents and not the teachers who, as a rule, demanded manual training. State Supt. M. A. Newell, of Maryland, answered Mr. Marble's arguments by arguments in kind and equally sharp.

In Mr. Ham's closing remarks he said:

We do not live by literature, but by labor. I bow to no one in my love of the beautiful in literature, but I detect greater beauty in greater use. There is to me more sentiment in a locomotive or a steamship than there is in the works of Shakespeare. George Stephenson is a grander figure in the progress of man than a score of the first statesmen of that time.

These words of an enthusiastic layman, who declared that it was the chief purpose of his life to see manual training adopted as the corner stone of our educational system, are quoted because, when taken in connection with his strictures upon the public schools, they were quickly caught up as expressive of the whole argument for manual training.

President Thomas J. Gray, of the Minnesota normal school, quotes the above remark of Mr. Ham, and, saying that "no man can carry out the absurd claims of the manual training apostles to their legitimate conclusions without seeing their utter nonsense," he proceeds as follows, by the aid of "cold logic," to draw "legitimate conclusions:"

The apotheosis of matter is complete. But one thing further is to be said, and that is potentially said in the statement given above, viz: Morse or Fulton is a grander figure in the progress of man than is Plato or Jesus Christ. The latter made neither steamboats nor telegraphs.³ He wrought in the world of thought, as

¹ Circular of Information, No. 6, 1888, p. 28, Bureau of Education.

² This particular argument was answered by the writer in Nashville in July, 1889.

³ There may have been more than one reason why he made "neither steamboats nor telegraphs," but it is fair to assume that a carpenter's son at the age of 30 was not altogether a stranger to the axe, the saw, and the hammer. (Supt. Thomas M. Balliet, of Springfield, Mass.)

did Plato, but the man who invents a sewing machine is greater than both! For shame, intelligent, Christian, American teachers! (School Journal, June 23, 1888.)

At the meeting of the National Educational Association in San Francisco in July, 1888, three papers, all opposed to manual training, were read before the general association. The first maintained that manual training was unnecessary and of small value, and what little value it had was special, not general. The second, that it was immoral, materialistic, sordid, and in the interest of caste. The third, that it was ridiculous and absurd. All these papers are published in the proceedings.

At the same time a splendid exposition of manual work of all grades from the kindergarten through the manual training school to the technical and art schools was made in San Francisco. This exposition did much to create interest, clear up ideas, and to blunt the edge of criticism. A prize of \$200 was offered for the best exhibit of work by a manual training school. The St. Louis school made a very full exhibition of its work and, as was evidently expected (for very few Eastern schools made exhibits), received the prize.

At the superintendents' meeting in Washington, March 6-8, 1889, manual training was the chief topic. Its relation to body and mind was broadly canvassed. Papers were read in the order named, by Prof. C. M. Woodward, Dr. W. T. Harris, Prof. Jerome Allen, of New York; Editor George P. Brown, of Illinois; Supt. Edwin P. Seaver, of Boston; Lieut. John D. Ford, of Baltimore, and Supt. H. W. Compton, of Cleveland. All the addresses were published in full in the proceedings. Mr. Brown's paper was in answer to a paper written by Professor Woodward and published in *The Teacher* (Simpson & Co., New York) in reply to an article by Dr. Edward Brooks of Philadelphia on the "Intellectual value of manual training."¹ Many of these papers were widely read, and the public mind was well prepared for the final discussion which began at Nashville.

At the Nashville meeting, in 1889, Supt. A. P. Marble, of Worcester, Mass., was president of the national association. It appeared to be his wish that the merits of manual training should be fully discussed. The council of the committee on pedagogics presented a report on "The educational value of manual training,"² which led to a long discussion. Professor Woodward spoke to the general association on "The results of the St. Louis manual training school." Dr. Harris followed this by a paper on "The intellectual value of tool work," and another paper on "Art education the true industrial education." Dr. S. H. Peabody presented a paper on the "Value of tool instruction as related to the active pursuits in which pupils may subsequently engage." Dr. E. E. White was announced to present a paper on manual training, but for lack of

¹ This paper in reply to Dr. Brooks forms Chapter XII in "Manual Training." (Contemporary Science Series, Walter Scott, London, 1890.)

² This report was signed by George P. Brown, S. S. Parr, J. H. Hoose, and W. T. Harris. It was written by Dr. Harris.

time he failed to read it, and it was not printed. Supt. Henry A. Wise, of Baltimore, read a paper on "Manual training in the primary and grammar schools;" and before the department for industrial training Prof. J. D. Walters, of Kansas, read a paper on "Ways, means, and maxims in manual training." All the papers read were published in the proceedings, and the council report was distributed by the Bureau of Education.

It was evident to all that the management expected to settle the question of the status of manual training at the Nashville meeting. In a certain sense this expectation was realized, for except as regards methods, grades, and limits it has not been under discussion in the national association since. But the Nashville discussion did not cease with adjournment. Its echoes were heard in every community. Every report and reference to manual training gave evidence of more or less familiarity with the Nashville discussion.

That discussion is too long to be quoted here. Undoubtedly false issues were presented, wild assumptions were made, and much that was irrelevant was introduced, but the outcome, "after the smoke and confusion of battle had cleared away," was a clear conviction and a united purpose. The last word was an elaborate review of the council report, written by Professor Woodward for *The Teacher* and republished in pamphlet form by Heath & Co. in May, 1890.¹ This review is in substance published as Chapter XV of Professor Woodward's English book on manual training, already referred to.

Meanwhile, reports of experiments and investigations contributed in a powerful manner to vindicate the claims made for manual training. A commission appointed by Governor James A. Beaver, of Pennsylvania, in May, 1887, made its report in 1889. President George W. Atherton, of the State college, was chairman. This report is exceedingly full and valuable. Every available source of information was consulted and results were analyzed and compared. The commission recommended the introduction of manual training as a required study in every State normal school; State appropriations for such districts as may establish manual training in connection with the public schools; a law requiring provision for manual training in new school buildings; the appointment of a deputy superintendent on manual training; and the immediate introduction of manual training into all reformatory institutions for youth of both sexes. This report was followed by a recommendation from the State superintendent that manual training be put into all high schools in the State.

Reports from experiments like the following were calculated to allay opposition. The school report of the city of Albany, N. Y., for the year 1889, said:

Your committee on manual training, in making this their first annual report, congratulate the board upon the success which has attended shop instruction. This department was first opened in February, 1888, making it a required course with the

¹ This pamphlet was also distributed by the Bureau of Education.

first and second year pupils, and an optional course with the seniors and juniors. But so great was the interest manifested on the part of the pupils, that all signified their desire to attend, and the interest has been sustained to the present time.

It was feared at first that the opening of this department might cause a falling off in the standing of the pupils in their other studies, but your committee are happy to say, after careful inquiry, that the standard of scholarship has been maintained, and at the present time our school stands higher than it ever did in the past.

Manual training is no longer an experiment with us. We have become satisfied of its high educational value, and we believe it will remain a fixed element in our system. Thus far, we have confined shop work to the high-school boys; next fall we shall introduce woodworking, in the sloyd form, among the girls in the high school. It has the united support of the entire faculty.

Finally, came the reports of committees sent out to investigate and report on the methods employed in different well-established schools and the success attending them. Many such reports were printed, but none have met the eyes of the writer more searching in its analysis or more discriminating in its discussion of details than that of Supt. Edwin P. Seaver, of Boston. As his report¹ states, he was sent by the school committee to visit and inspect the manual training schools of St. Louis, Chicago, Toledo, Cleveland, Baltimore, and Philadelphia.

Mr. Seaver began with St. Louis. He shall tell his own method of inspection and his own conclusions in regard to the educational value of manual training, just then a matter of interest to every educator:

At the time of my visit the school was in full operation. The director bade me make myself perfectly at home, question the teachers, question the boys, and make my investigation as thorough as was in my power, with all the help they could give. I devoted four days to the investigation. The results were a large book, full of notes, and a clear impression in my mind of a well-organized and vigorously working school. I can not here go into details. Suffice it to say, I used my privilege of questioning freely and thoroughly. I followed classes from the schoolrooms into the drawing-rooms, and into the shops. I found the boys equally alert and intelligent in all branches of their work. They were as ready to describe and give the reasons for every step in the process of forging a pair of blacksmith's tongs as they were to state and give the reasons for every step in the demonstration of a geometrical theorem.

There are those who doubt the educative value of manual training. Let any such persons spend a few hours in a good manual training school like this, observing the boys at their work and questioning them about it, and if his doubts about the educative value of manual training do not vanish it will be because he measures educative value by standards not in common use. I should desire him particularly to converse with those boys in the machine shop, now drawing near the close of their course, and busily at work on their "projects" for graduation day. Let him ask for explanations, question them closely for reasons, observe the quality of their work, note their own criticisms and estimates of it, and he must be an unreasonable man if he does not admit that somehow their school training has developed in them a high degree of intelligence. The result is too striking to be overlooked, analyze and account for it as we may.

Since June, 1890, there has been no opposition to manual training, except such as has arisen from differences of opinion as to methods of

¹ Boston School Document No. 15, 1889.

organization and instruction. Manual training is recognized as an essential feature in the education of both boys and girls. While the nature and essence of manual training were under discussion, manual training schools were multiplying and prospering. Their existence was accepted by the public before their right to exist had been established in the judgment of those educational critics "who were most competent to decide."

The people of Philadelphia have been conspicuous in their cordial reception and nurture of manual training. In May, 1888, an exhibition of industrial work was made, lasting three days. It embraced "all kinds of school work that can be represented graphically or objectively, viz, manual training, industrial art work, sewing, kindergarten work, clay modeling, and manual work of every kind produced in the schools." The expense was met by the Public Education Association. School boards throughout the country were invited to send representatives, and many did so, presenting reports on their return. President James MacAlister (then superintendent) in March, 1890, in a valuable paper on manual training in the public schools of Philadelphia, says, in reference to that exhibition:

The committee can not too warmly express its approval of the spirit displayed by Philadelphia in this great educational movement. The exhibition is to be regarded as one of the most important events in our school history—important in its immediate influence, but vastly more so in its bearing upon the future. The feasibility of a general system of co-education of head and hand has been established beyond peradventure, and in presenting with more than usual detail the permanent features of the exhibition, the committee have been actuated solely by the desire to place on permanent record the part taken by Philadelphia in the inauguration of what must be regarded as the most important educational reform of the present time.

This paper of Superintendent MacAlister is valuable as showing the result of four years of experience and observation. He says:

In the manual training school the work done by the boys in mathematics, literature, and history is, to say the least, in no respect inferior to that of schools of a similar grade in which the whole time is occupied with class-room work.

The processes of manual training afford a better means of cultivating the faculties of reason and judgment than many things which now find place in the courses of instruction. Measurement, comparisons, the adjustment of means to ends, the cooperation of mind, hand, and eye, all conduce to a broader mental culture than can be gotten from many of the studies which at present usurp so large a portion of the pupil's time. * * * What is needed is to bring thought and labor together; to make every thinker a worker and every worker a thinker, and there is no place where this can be done so well as in the school.

The success which has attended the manual training school from the first is the best guaranty of the soundness of the principles upon which it is organized and conducted. Beginning a little more than four years ago, in a very humble way, it has steadily grown in public confidence and approval. It has more than justified every claim that was made in its behalf. Every available foot of space is now occupied, and it has become impossible to admit all the pupils who apply for admission.

This statement of things led to the establishment of the Eastern Manual Training School, so that there are now two large public manual

training schools in Philadelphia. Both these schools, enlarged during the past summer (1894), are full to the maximum. The credit for the initiative of the movement in Philadelphia would seem to belong to Edward T. Steel, esq., the president of the school board which called Mr. MacAlister. President Steel had already seen the workings of manual training in St. Louis and Chicago, and he wanted a man in sympathy with it. He found just what he wanted in James MacAlister.

In Philadelphia manual training is a very comprehensive term. It embraces all the hand work from the kindergartens to the high schools. It is exceedingly full in its provisions for the girls in its grammar grades. Sewing and cooking are as systematically and as successfully taught as arithmetic.¹

Among the more recent developments of manual training—and no attempt is here made to mention all that has been done—is the organization of the following: The manual training high schools of Louisville, Ky.; Providence, R. I.; Chicago, Ill.; Denver, Colo.; Brooklyn, N. Y.; Cleveland, Ohio; Menomonie, Wis., and Boston, Mass., the last named bearing the name of the Mechanic Art High School. Instances of the incorporation of manual training in old high schools are too numerous for mention. At the World's Fair there were exhibits of tool work from seventy American manual training schools of grammar or high school grade.

The growth of the Louisville manual training high school is interesting, and as that school serves the purpose of a model in many respects, a sketch of its history is here given.

As already stated, President Runkle gave an account of tool instruction before the National Educational Association, which met in Louisville in 1877. In 1881 Professor Goss gave a lecture on the course in mechanic arts in Purdue University before the school board. Soon after an effort was made to organize a manual training course in the male high school, but it was defeated by the trades and labor unions of the city under the mistaken notion that the aim was to teach trades.

In May, 1886, Professor Woodward, of St. Louis, invited by the Conversation Club, gave a public lecture on the aims, methods, and results of the St. Louis school. His lecture was illustrated by shopwork and drawings, the work of the pupils.

In 1890 the school board took up the matter in earnest and a beginning was made in the male high school in September of that year. A single division of 20 boys was formed and equipped with woodworking tools. The boys devoted one hour before the regular session of the

¹ Recent information from Philadelphia is to the effect that in June last 500 boys, who had finished the grammar schools, applied for admission to the manual training schools. In the examination over 300 made a standing of 70 per cent or above and were admitted. The other 200 were rejected. Superintendent Brooks says of these 200 rejected boys: "Some of them returned to the grammar schools, but the majority of them probably ceased to go to school."

high school to a lesson in drawing and two hours after the regular session to shop practice.

In spite of the above very unfavorable conditions the experiment was declared a success, and in September, 1891, the equipment was increased to accommodate 48 boys; 96 boys, however, applied and were admitted to the work. The practice time was cut to forty-five minutes daily and the shop hour was incorporated into the school programme.

Efforts were then made to raise by subscription money to build and equip an independent manual training school, but all attempts were inadequate till Mr. A. V. Du Pont took the matter in hand and proposed to give the land, erect the buildings, and equip the school himself. In May, 1892, his proposal was accepted by the school board, which bound itself to "maintain in said building a manual training school of the first order as a part of the public school system, free to all white boys in the city qualified to enter the male high school and not under 13 years of age." It was also agreed that "the teachers and professors in the manual department shall in every case be graduates of some reputable manual training school."

By October, 1892, the unfinished buildings permitted partial use, and the school started with 122 students. In May, 1893, the completed buildings were dedicated and turned over to the school board. Professor Woodward, of St. Louis, who had been deeply interested in the enterprise, delivered the dedicatory address. The teacher of all the experimental classes and the principal of the school was Mr. Henry F. A. Kleinschmidt, a graduate of the St. Louis school.

The school is admirably equipped, well managed, and deservedly popular. The present enrollment is (October, 1894):

Post-graduate student.....	1
Senior or third-year class.....	41
Middle or second-year class.....	65
Junior or first-year class.....	110
Total.....	217

The floor plans of the school buildings are given later in this report, with items of cost. The reader is referred to them as exceedingly valuable.

It is with profound regret and personal sorrow that the writer adds to the above brief sketch the fact that just two weeks after the dedication, in the midst of an intense feeling of satisfaction at the completion of the work and at the spirit shown by the school board and people of Louisville, Mr. Du Pont very suddenly died.

The city of Louisville is to be congratulated on having had such a citizen, and he was to be congratulated on having such an opportunity. He could have builded no more splendid monument, and he could have set no more glorious example.

The State of New Jersey has been distinguished for generosity and zeal in the cause of manual training. In 1878 Prof. Robert H. Thurs-

ton—then of Stevens Institute of Technology, Hoboken—compiled a report on the relation of education to the higher manufactures, recommending the establishment of what we now call manual training schools. The interest aroused by this report was fostered by the labors of such persons as Rev. George C. Houghton, Mrs. Martha B. Stevens, Dr. Nicholas Murray Butler, and others. In 1885 the State, through its legislature, offered to duplicate any amount between \$500 and \$5,000 that a city or town would raise for the establishment and support of manual training. Under the stimulus of this action a great many beginnings have been made, though as yet no fully equipped manual training high school has been organized. Though all reports of progress and results appear to be quite satisfactory, it is evident that in many instances the amount of legitimate manual training incorporated with high school studies is small, and that its position as an integral part of the school programme is by no means well assured.¹

The latest and most important step in the interest of higher manual training is the action of Massachusetts, under the State board of education, and the lead of Hon. Frank A. Hill, secretary, in making it obligatory upon every city of 25,000 or more inhabitants to establish and maintain manual training in a (or in the) public high school. This act is already in force, and as a consequence some twenty cities are discussing plans for such schools. In harmony with this step forward is the establishment of a new State normal school at Fitchburg, which will include a manual training plant. This will serve not only to train teachers in the new elements, but will stand as a model equipment for all high schools.

Nowhere has manual training for the grammar grades been more thoughtfully and thoroughly studied than in Boston. The school committee, under the lead of Hon. Samuel B. Capen and Supt. Edwin P. Seaver, have conducted the most searching investigations of existing theories and practices, as applied to elementary work in wood, with a view to its introduction into the upper grades. A sketch of the work done previous to 1893 is given by Chairman Capen in his report for 1892. "As this is the first year in which cooking and manual training can properly be said to have become universal in our grammar schools, it seems proper to give a brief outline of their early history."

After reciting the unavailing efforts of private individuals in 1881 and 1882 to get classes of pupils into the North Bennet Industrial School, permission was granted by Mr. C. C. Perkins, a member of the school committee, to the boys from one school to enter the "industrial school for the instruction of carpentry, printing, and shoemaking," in September, 1883. In March, 1885, permission was given to pupils to attend the industrial school supported by Mrs. Quincy A. Shaw, two

¹ It is perhaps a little unfortunate that the name "manual training" is made to cover all hand work in all grades, and that the higher tool work and drawing are so little coordinated.

hours a week, the girls to have "lessons in cooking, housekeeping, and laundry work, and the boys in printing, carpentry, and shoemaking."

Two cooking schools were started in 1885, one supported by Mrs. Mary Hemenway, the other by Mrs. Shaw and Miss Sarah B. Fay. The first school was assumed by the city in 1888 and the second in 1892. "These two kitchens were the first public school kitchens in America." (School Doc. No. 21, 1892, p. 15.) Other cooking schools were established in 1886 and subsequently, till every grammar school was provided for by 1893.

An apology for a woodworking shop for grammar boys attending once a week was started in 1884, and experiments in sloyd were started in 1888. Modifications were at once found necessary in the adaptation of sloyd methods to American needs and standards, prominent among which was a satisfactory system of drawing. It thus appears that as late as 1888 the Swedish sloyd had "no satisfactory system of drawing" in connection with their whittling.

While experimenting with a modification of the sloyd system arranged by Mr. Gustaf Larsson, three other schemes (they can not be called systems, for they all aim at the same thing and include almost identical methods of instruction, the differences being confined to number, sequence, and character of the exercise, very much as different arithmetics employ different examples, different illustrations, and different orders of contents) were tested under the most favorable conditions; one designed and supervised by Mr. F. M. Leavitt, one by Mr. F. W. Kendall, and one by Mr. B. F. Eddy.

The comparative value of these schemes is still a matter of investigation, but there is no question that excellent work is being done in all cases, and that the plan ultimately adopted will contain elements from all.

Too much can not be said of the enlightened policy and judicial fairness of the Boston managers. Teachers of drawing and tool work have been stimulated to study their subjects and to test their theories, with a view not so much to favor external interests as to arrive at the best.

Other cities (notably New York and Chicago) have experimented with tool work in the grammar grades, but it seems to the writer that no experiments have been so instructive, and on the whole so generally successful, as those in the Boston grammar schools. The following testimony is worthy of permanent preservation. It was written about January, 1893, by President Capen, of the Boston school committee:

In concluding this part of our report we wish to emphasize again the importance of this new education which is educating the hand and the eye and the mind together. We are beginning to see more and more that *thinking begins with things*. There are some who may still believe that the outlay for shops and for these special teachers is unnecessary, and that the whole thing is a caprice of the hour. But the number of such is very few, and they show that they have given the matter but superficial thought. The little time that it has been tested in our schools has already shown its value. Nothing else has such power to soften, refine, and humanize rude girls

and boys, to lead them to respect others, and to bring out those qualities which will lead them in turn to be respected. In the early spring of this year a class of boys was brought for the first time into one of our shops. They were from homes in one of the worst sections of our city, and for a lesson or two seemed almost ungovernable. But in less than three months these rude boys became so fascinated with their work that, compelled to be left largely to themselves one day on account of the illness of a teacher, they excited the admiration and comment of some educators who unexpectedly called because of their ceaseless attention to the work in hand. These few weeks had changed the wild boys of the street into those that were courteous and respectful and eager for advancement. *Its value as a disciplinary as well as an educational force has not been overestimated.*

The question may naturally be asked, "What has the city of St. Louis, the home of the pioneer manual training school, done in the matter of manual training." The answer is, unfortunately, "Nothing."¹ But this "nothing" is not in consequence of public indifference, but because of lack of money. The money for the support of St. Louis public schools comes partly from the State, but chiefly from a 4-mill tax on the assessed value of property in the city. At present value the income is barely sufficient for the needs of the schools as now organized. All manual training is more or less expensive, requiring additional equipments, rooms, and teachers, and the school board may neither run in debt nor increase the rate of taxation, except by securing the authority from a "majority of the taxpayers" of the city, an appeal which no school board has recently made. This explanation is due both to the school board and to the people of the city, than whom no community could be more generally in favor of manual training. Undoubtedly the managers of the public schools will ere long find a satisfactory way out of the difficulty.

In view of the general acceptance of manual training as a necessary feature of education, and the general need of exact information in regard to methods of organization and forms of equipment, it is thought best to insert an extract from an essay upon organization, read by the present writer at Bethlehem before the American Institution of Instruction, in July, 1891.

THE ORGANIZATION OF MANUAL TRAINING SCHOOLS.

Should manual training be introduced into existing high schools in a distinct course of study, or should separate schools be organized to be known as manual training high schools?

The answer to this question should be based on a full consideration of the constituency to be counted on, or the probable demand for manual training, and, secondly, on the chances for successful management.

I. THE CONSTITUENCY.

While claiming that manual training should to a certain extent enter into the education of every boy and girl, and claiming also that no assumption should be made as to the future careers of pupils in manual training schools, it is evident that

¹ The St. Louis manual training school is one of the subordinate departments of Washington University, and is not a free school, though it distributes annually a large number of free, or partly free, "scholarships."

a manual training school is sharply distinguished from a classical high school and from a commercial high school, by its clear recognition of the demands of industrial occupations. There is of course much common ground in the three kinds of school, but only their distinguishing traits are now referred to. I am willing to admit that the popular demand for manual training arises from a conscious desire on the part of parents and children for an education which shall in a direct and evident manner prepare for the duties and responsibilities of life. The existence of this desire proves nothing as to the destined career of particular people. A large majority of our active workers are engaged in manual occupations, such as agriculture, manufacture, construction, and transportation; and it is only reasonable to suppose that a school which fairly represents the people will contribute workers to carry on such work, even though they greatly improve its quality and widen its scope.

The belief that there is a school education which, while very general in character, bears in the industrial direction as no former education bore, and that it is capable of giving higher intellectual standing to industrial workers, as well as tending to their social and financial success, is what gives strength to the manual training movement in every community.

There is no question but as a rule those who for any reason look forward to industrial life, and who see no manual training school open for them, withdraw from school before the high school is reached. This is emphatically true of boys. Hence the great majority of boys of high school age are not at school. The census tables show that between 7 and 8 per cent of the population of a city consists of boys and girls in their fifteenth, sixteenth, seventeenth, and eighteenth years.

Suppose a city has 100,000 people; there are then about 7,500 young people of high school age. Not one-tenth of them are in the high school, and from two-thirds to four-fifths of them are not at school anywhere. These unschooled youth are not all stupid, nor vicious, nor poverty-stricken. Fully one-third, if not one-half, of them are so constituted and so situated that they would attend a manual training high school if one were open to them. When, last January (1891), I urged the mayor and school committee of Boston to establish an independent school for manual training, I told them that they would have 1,000 boys applying within three years, without sensibly interfering with the attendance at the Latin school or at the English high.

The experience of Philadelphia is suggestive. Its first manual training high school was crowded for some years and applicants were turned away. A second school of the same kind was established over a year ago.

You will find the same conditions in every city. It is a new idea that there is an education which precedes industrial life as appropriately as there is one which precedes mercantile life or the professional school. Until recently it was taken for granted that it took no great amount of brains to be a skilled mechanic, and that an education was largely wasted on one so long as he remained a mechanic. It was formerly assumed that a skilled worker in the materials of construction need not be a draftsman, nor a mathematician, nor a chemist, nor a physicist, nor a master of English. It is now known that every one of these things helps, not only to make one more respected and more influential as a citizen and a man, but to be a better and more successful mechanic.

This idea is having immense influence among the people in favor of more education and what they consider more appropriate education. A second idea is that intellectual vigor and practical power over men and things are the fruit of more than one course of study. Already it is seen that the graduate of a manual training school has many advantages, when compared with those whose education has neglected either hand culture or brain culture.

Hence, without further excursion in this fruitful field, I conclude that there is in every city an abundance of good material, backed by a wide demand, for a high school in which the manual elements shall be essential features entering into the course of study of every pupil.

II. AN INDEPENDENT SCHOOL WITH A FULL CURRICULUM.

I wish now to show that it is better to establish independent schools, in the place of enlarging and extending those already existing.

This is a question of policy worthy of serious consideration. Usage has not been uniform. In Baltimore, Philadelphia, Chicago, Boston, and Providence they have complete and independent manual training schools.¹ If to these we add schools really organized for general education but not under public management, I should mention those of Chicago, Cincinnati, San Francisco, New Orleans, and St. Louis; the high school of Pratt Institute; the Miller School of Crozet, Va.; Drexel Institute; Girard College, and the Lick Mechanical School of San Francisco.

The great majority like those of Toledo, Cambridge, Springfield (Mass.), Minneapolis, St. Paul, Omaha, New York, Davenport, Fall River (Mass.), Menominee (Wis.), Indianapolis, Albany, and the cities of New Jersey, have incorporated manual training courses of greater or less extent into existing schools. This latter course was the natural one, so long as the value and popularity of manual training was uncertain.

Assuming then that a city has decided to furnish to its youth of high school age opportunity for manual training, what are the specific reasons against an incorporation with the existing high school and in favor of an independent organization? Some of the following arguments will have far less force ten years hence than they have to-day.

(1) All the traditions of the existing high school are opposed to manual training. The manual elements did not enter into the education of the teachers, and it is perfectly natural that they should lightly value a training they have never had themselves, which they have never felt the need of, and which as they think has no place in a liberal education. All high school teachers do not feel thus, but many of them, perhaps a majority of them, do.

We have no right to complain of these teachers. If they have the courage of their convictions, they will speak out and they will belittle the manual features. We must give them time; wisdom and judgment are matters of growth, and none of us stand now where we stood ten years ago. But meanwhile if we would give the new ideas a fair chance for healthy, vigorous growth, we must plant them in a new field aloof from the blighting winds of a contemptuous scorn and the clouds of a haughty indifference.

(2) The old programmes are all against manual training. One principal says: "I am in favor of manual training, but every pupil must have his five recitations first. The boys who wish to have manual training can take it after school." Another principal insists upon four recitations, or perhaps only three, but they must follow the old order and the manual features are always to be secondary; they are the first to be cut off and omitted on special occasions. In some schools a failure in mathematics or history debars one from the day's exercise in shop, and so on. In some cases principals refuse to admit one's standing in shop and drawing as elements of scholarship in awarding class honors. The standards which ordinary high school pupils must reach if they are to go into higher education fail to recognize manual training beyond a possible requirement of a feeble amount of geometrical drawing. This neglect has a tendency to depreciate manual training in the minds of students.

These evils do not exist in all schools, nor do all of them exist in any school, but they are far too common and they affect manual training pupils unfavorably.

(3) Even when the disposition of teachers and the arrangement of the programmes is all that one could ask, the manual training sections of a general high school are exposed inevitably to unfavorable influences. The full manual training school programme covers more hours per day than the ordinary academic programme—at least it ought, even if it does not. The result is that every day manual training students are exposed to peculiar trials and temptations. When other students take their

¹ To this list can now be added Denver, Louisville, Cleveland, and Brooklyn.

traps and march out of school for a hot dinner at home or an hour's recreation, the manual student must keep on an hour longer at his mathematics, science, literature, drawing, or shop. Of course, if he is zealous and high minded, he can stand the daily trial (or, rather, it is no trial to him), but the contrast is, in general, unfavorable, and it works against the success of the manual course. In the independent school all the pupils have the same extent of programme and all are dismissed at the same time. It matters not if a different hour of dismissal obtains at another school; in this school there is uniformity and the pupils think nothing about it.

(4) There is a concentration of interest in a school where there is a single course of study. Boston is wise in differentiating its high schools. The classical school is by itself. The interests of all its pupils are centered upon Latin, Greek, and mathematics. The pupils have a common interest, and their conversation out of hours is on subjects common to all. There is no tendency to reopen questions of choice. The enthusiasm of one fires the enthusiasm of all his associates, for their studies are the same.

In a school with a variety of courses the case is very different. The zeal of one is very apt to quench the ardor of another, for it is in a different field. Boys are prone to think other studies more interesting, or more profitable, or easier than they find theirs. This daily association of students in different courses of study is demoralizing. Hence, I say, if your community is large enough to admit of it, let your high-school work be differentiated into different schools, not on a geographical basis, but according to their curricula.

(5) There is another reason for the independent organization of the manual training school, which I base, not on observation, but on my knowledge of human nature. When manual training is made a sort of annex to the high school, and not incorporated as a coordinate and integral part of it, there is a divided responsibility in the care and education of a certain number of pupils.

Many of our most valuable high school principals feel unable to assume charge of the manual features, and would prefer to leave the care of such entirely to a superintendent. Hence, during certain hours pupils are under the direction of one person; during other hours, under another. Any unusual demand (and there are always a good many such demands) trenches on somebody's time and the off hours are a common battle ground.

All the advanced drawing, geometry, mechanics, physics, and chemistry should be clearly correlated with the shop work to secure the best results, and hence I think the pupils should be as homogeneous as possible, and they should all be under the direction of one head.

I have thus given five good reasons for a separate organization. A reason for the opposite course would exist in the matter of cost, provided the manual work was relatively small and the students were gathered from different grades. I am not thinking of such scattered divisions, nor of classes made up almost entirely of volunteers from classes already in high schools. Neither am I planning for those students who are engaged in fitting for classical colleges, and who can spare time for a single shop exercise per week. If possible, let such students have a shop in their own high school. I have in mind a school of several hundred pupils of both sexes, who are to have an exercise in tool work or drawing, or in both, every school day. When these attend in fair proportion, there will be found to be no essential difference in cost between the two methods of organization. I therefore advise that the city manual training school be an independent institution, standing on its own ample lot of ground and under its own principal and corps of teachers.

THE CURRICULUM.

The curriculum of the manual training school has undergone very few changes since the first one was published in St. Louis in 1880. In all independent manual training schools the length of courses is three

years. The daily programme contains six periods, each period being either fifty or sixty minutes. Each pupil has mathematics one period, science one period, language or literature one period, drawing one period, and shop two periods. Working sections contain from 20 to 25 pupils, who are taught as a unit, each section having its own order for the day. Most schools offer French and German, as may be elected, and some offer Latin. All prepare pupils for admission into colleges and technical schools not requiring a preliminary knowledge of Latin and Greek. All aim to give a thorough laboratory training in chemistry and physics, and require constant study of literature and practice in English composition. Some have good facilities for the study of biology. In all, the tool work embraces:—

Woodwork.—Joinery, turning, wood carving or parquetry, and pattern making.

Plastics.—Molding, casting or modeling.

Hot-metal work.—Forging, tempering, soldering, and brazing.

Cold-metal work.—Bench and machine cutting, fitting and finishing of iron, steel, and brass; the thorough study of elementary forms, and project work.

The method of instruction employed in the shops varies doubtless in different schools, but it probably varies less than do the methods of teaching Latin or physics. The following excellent statement of the equipment for woodwork, and the method of instruction, is taken from the prospectus of the Manual Training High School of Providence, R. I.

DEPARTMENT OF WOODWORK.

CARPENTRY.

Equipment.—The arrangement of benches in this shop admits of class work for twenty-four students at each period. The benches are constructed so as to give to the student his individual cutting tools, while the general locker is supplied with such tools as fall to the use of the mechanic and which require no grinding or careful preparation. These are used in common by all the divisions receiving instruction. In the former complement are the plane; smoothing, jack, and fore; the firmer chisels, $\frac{1}{2}$, $\frac{3}{4}$, 1 inch. The bits, $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$ inch, occupy a drawer above the student's locker, in which is kept apron and unfinished work. The latter complement includes a 12-inch steel square, try-square, bevel hammer, mallet, block plane, rule, crosscut, slitting, and back saws, gauge, winding sticks, dividers, bit brace, knife, nail set, and pencil. All edge tools are sharpened for use when the student enters upon the course, and he receives early instruction in the proper care and use of them.

Course.—As projected, there are twenty-four graded exercises, calculated to bring about the use of all the tools and the methods in vogue in general carpentry, and requiring five one-hour-and-a-half periods a week for the half year of the junior year. Commencing with the use of the gauge, bevel, try square, and knife on one-half-inch stock, the exercises pass in orderly sequence and value through planing, sawing, boring, squaring, chamfering, gauging, tenoning, mortising (single and double), halving, mitring, dovetailing, plowing, jointing, and gluing to the final pieces, which combine nearly all of the processes of the term's work. Completing these, the class begins some project in joinery, from original drawings made outside the department. As some students show a marked aptitude and facility over their fel-

lows, and, as it is imperative that the class be kept as a unit in its progress from piece to piece, numerous supplementary exercises have been devised, embodying different forms of the simple principles previously worked out, so that all can be kept at work and practically together. The methods of instruction and practice are essentially those of the Russian-American system.

Similar careful analysis runs through all the other work with different tools and on different materials. The matter to be especially noted is the educational air of it all and the utter absence of the commercial spirit.

Shop exercises should always be made from drawings. During the first half year these drawings should be made by the students themselves, during their drawing hours, under the direction of their drawing teacher. The cooperation of shop and drawing teachers is necessary. Later the pupils may use blue prints.

A MODEL PROSPECTUS.

Having now brought our history down to the year 1894, the writer takes pleasure in presenting the greater portion of a prospectus issued by the school authorities of Brooklyn, N. Y., on January 31, 1894. This document, which is one of the latest, is also one of the best announcements of a high-grade manual training school. Its strong, clear statements show better than anything else can the substantial realization of the hopes and plans which underlay the establishment of the St. Louis manual training school fifteen years ago.

PROSPECTUS.

We are pleased to announce that a manual training school is about to be opened under the direction of the board of education in the building on the corner of Court and Livingston streets, formerly occupied by the boys' high school. The building has been thoroughly repaired and refitted, and is being furnished with apparatus, machinery, laboratories, etc., second to that of no other manual training school in the country. A corps of competent instructors has been obtained, all of whom are men of experience and specialists in their respective departments.

The school will be opened for registration February 9, and will receive as students male graduates of the city grammar schools or others of like scholastic attainments from other schools. Class work will begin February 12. A copy of the course of studies is appended to this communication. It is in most respects similar to the courses pursued in the famous manual training schools of St. Louis, Philadelphia, Boston, and other cities.

It will be noticed that one period each day will be devoted to drawing, the design being that each student shall work in clay, woods, and metals, only from working drawings prepared by himself. He will thus have the opportunity of becoming an accomplished draftsman as well as an expert in the use of all the leading tools. Although two periods a day will be devoted to shopwork, the design is not to teach a trade or trades, but to teach the elementary principles that underlie all trades, and to teach the use of all the more important tools. The course in the mathematical and physical sciences will be closely correlated with the shopwork, so that the scientific basis of all mechanical construction will be clearly apprehended. Physics and chemistry, as well as the wood and metal work, will be taught by the laboratory method—that is, by experimental work performed by the

student himself. In order that the student may be properly prepared for citizenship, he will devote one period per day to composition, literature, history, and civics. The result of these combined courses will be that at the end of three years any boy of average intelligence will not only understand the use of tools, and the practically important parts of physics and chemistry, and be an accomplished draftsman, but he will be able to manufacture what he has designed on paper, to understand a steam engine or an electric-light plant, and to operate or to build either with his own hands.¹ In short, the school will be a thoroughly equipped scientific school of high school grade, the object of which will be to train every power of the mind and body; to educate the mind to high ideals, as well as to make the hand quick and skillful.

Experience has proved that a manual training school gives mental and moral training not given by the purely literary high school, because it gives an opportunity of illustrating principles by practice and of supplementing abstract thought by concrete expression; that it trains the student to investigate, measure, compare, and invent; that it cultivates habits of accurate observation and close attention, together with neatness, order, perseverance, and patience; that it enforces logical thinking and concentration of thought, and trains the executive powers; that it educates the senses as to form and color, and cultivates good taste; and that it develops the physique, increases respect for manual work and manual workers, and produces manual dexterity, so that a person is better fitted for any trade or occupation he may choose.

Manual training opens up a wide field of occupation in after life. The choice of boys now leaving our public schools is practically limited either to commercial avocations—those of clerks, salesmen, and the like—or to a college course in preparation for one of the learned professions. The manual training school is the open door not only to those occupations, but also to every art or trade where the cultured mind, the trained eye, the deft hand, and an educated taste are required.

While the school will give the student the best possible training outside a university for the work of practical, everyday life, it will at the same time give the best possible preparation for the great technical schools.

The course of study, on following page, is furnished by Principal Bradley:

¹ Of course this does not mean that the boy is a mechanical or an electrical engineer, but that under proper conditions he can at once intelligently participate in constructive work.—(Editor.)

Course of study, Manual Training High School, Denver, Colo.

Year.	Mathematics.	Science.	History and English.	Foreign language.	Manual training.		
					For boys.	For girls.	Drawing.
First year	Algebra—5*	Physical geography until January; botany—4.	American literature and rhetoric until April; general history—3.	German—4	Joinery, 16 weeks; wood turning, 12 weeks; wood carving, 10 weeks—10.	Plain sewing; joinery, on alternate days from January to June—10.	Free-hand, 2; mechanical, 2.
Second year	Plane and solid geometry—4.	Physics—3†	General history until April; rhetoric; English and American literature—3.	German—4	Pattern making, 15 weeks; molding, 5 weeks; forging, 18 weeks; lessons in brazing and soldering—10.	Drafting patterns; cutting and fitting undergarments; machine sewing; wood carving, on alternate days from January to June—10.	Free-hand, 2; mechanical, 2.
Third year	Solid geometry (finished); review of algebra; plane trigonometry; book-keeping—4.	Chemistry; elementary electric engineering, 2 hours per week for 28 weeks; elementary study of the steam-engine, 2 hours per week for 10 weeks—5‡.	General history; English literature; civil government; political economy—5§.	German, French—5§	Machine-shop practice and machine construction, 8 hours per week, 10 weeks; 6 hours per week, 22 weeks.	Cooking and preparing food; purchasing household supplies; study of properties of foods; food adulterations and how to detect them; wood carving—10-8.	Free-hand, 2; mechanical, 2.

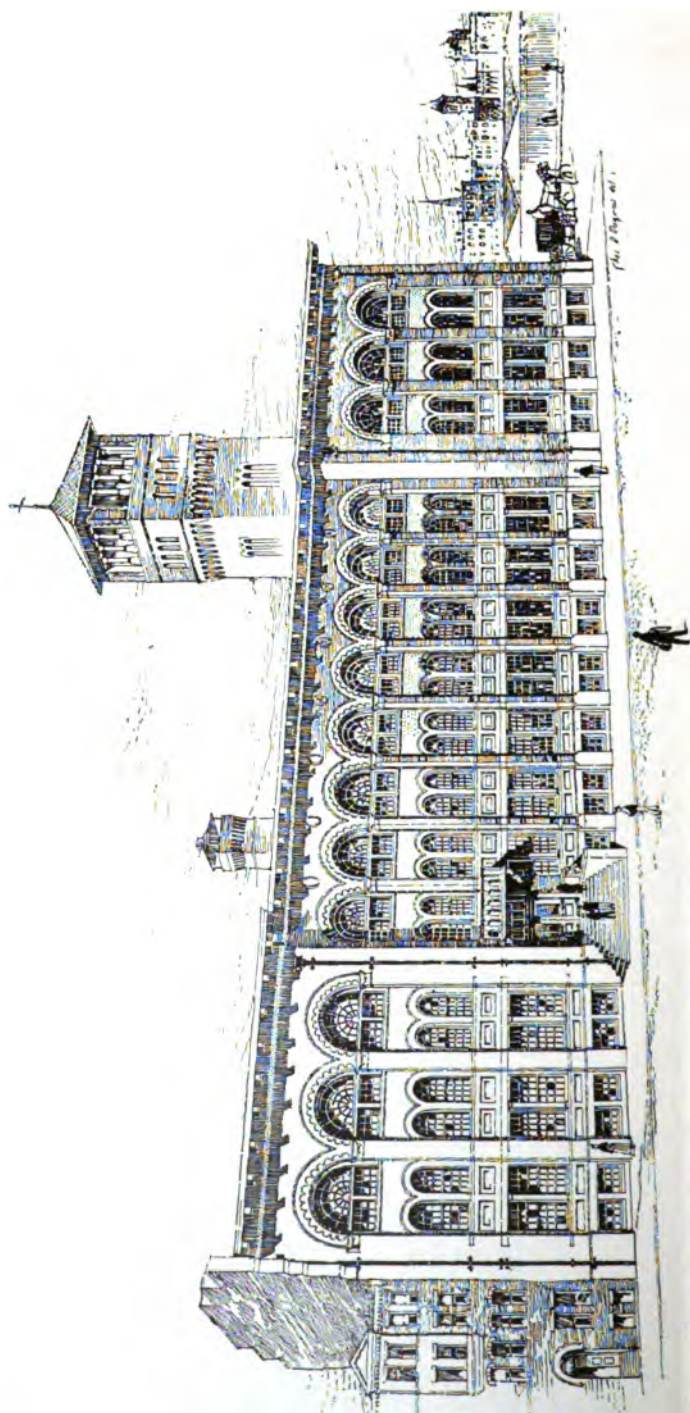
* These figures represent the number per week of recitation periods of 47½ minutes each.

† The laboratory periods of 45 minutes each week are not included in this.

‡ The first four months.

§ French may be substituted for mathematics in the third year

The school day is from 9 a. m. to 2.40 p. m., with an intermission at noon of 25 minutes.



MECHANIC ARTS HIGH SCHOOL OF BOSTON, MASSACHUSETTS.

BUILDINGS AND FLOOR PLANS FOR MANUAL TRAINING SCHOOLS.

The plans given below are those of the Boston Mechanic Arts High School, the Denver Manual Training School, and the Louisville Manual Training High School. There may be plans superior to all these, but it has not been the privilege of the writer to examine them.

Great progress has been made in the arrangement of rooms and equipment since the first manual training school was erected in St. Louis in 1879. This was to have been expected. No one could tell, without experience, the best way to teach, the best outfit for a shop, the best method of distributing power, the proper number and location of lavatories, the necessary amount of light, or the disturbing effect of shop noises and vibrations. Doubtless there is still much to be learned in regard to these matters, but it will be profitable to report the progress already made.

Accordingly, the floor plans of three recently constructed manual training schools are given in connection with perspectives of the buildings. Each has been planned after careful examinations and mature deliberation. In some cases the shape and size of the lots have had marked influence in determining the plan. In one case—that of the Louisville school—no such limitation was imposed, and in its general features it appears to the writer to be superior to all others.

THE MECHANIC ARTS HIGH SCHOOL OF BOSTON.

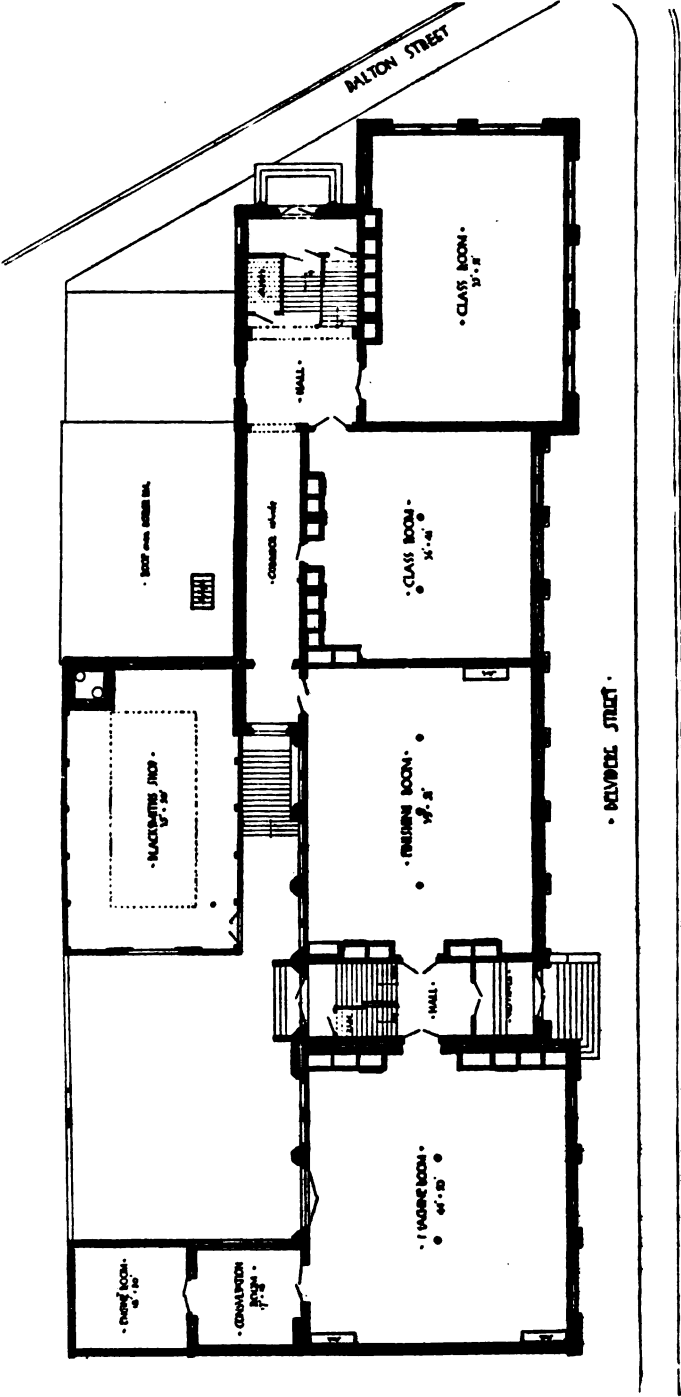
This building is shown by three plates. It is thus described in the official report:

The building is three stories in height, 224 feet long by 90 feet wide. The basement, besides containing the boiler rooms, etc., will be provided with several hundred lockers to contain the regular clothing of the boys when they are in their working costume. There will be on the first and second floors several class rooms, each to accommodate 72 pupils, in three sections of 24 each; a machine shop, with engine, lathes, planers, etc.; a blacksmith shop, with 25 forges and anvils; a molding shop; a carpenter shop; a finishing room; a wood-turning room; a chemical laboratory, and a reading room and library. In the third story there will be a large room to be used both as a gymnasium and assembly hall. The building will be able to accommodate from 300 to 350 pupils, and it is believed that it will be the most complete building of its kind in the country.

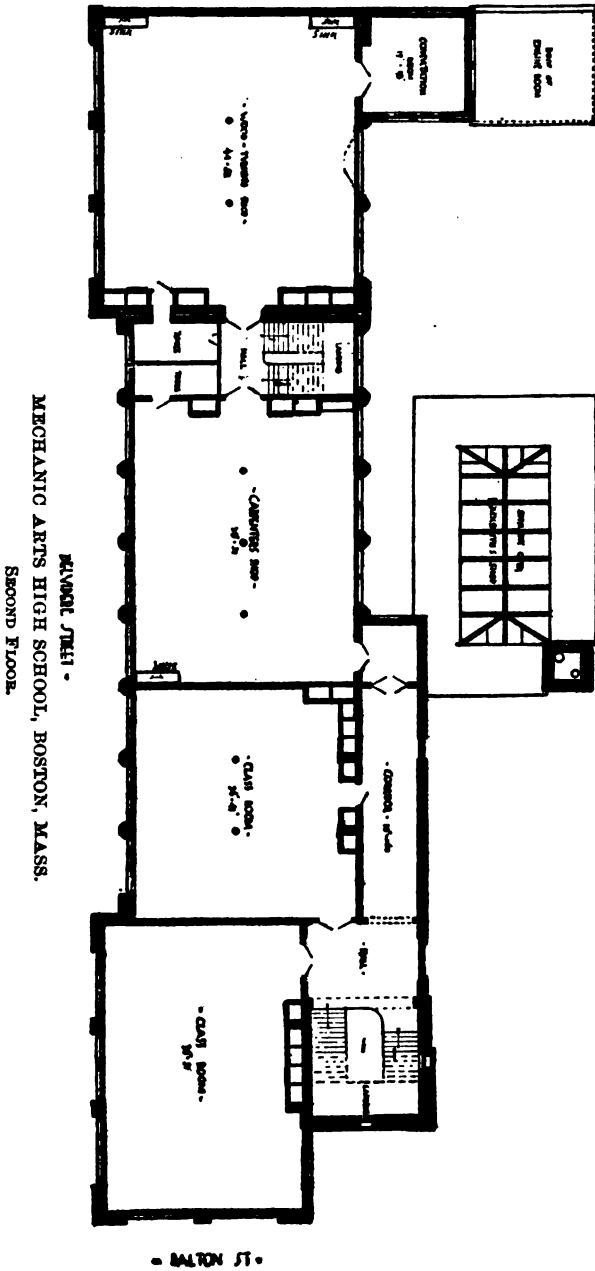
The school was opened in September, 1893. The lavatories are not shown on the drawings, but they have been so provided in the different shops that "the boys are not compelled to leave the rooms to wash."

Mr. Charles W. Parmenter, the principal, writes:

It must be remembered that the present structure is only the main portion of the original project. The wing which is to contain the physical and chemical laboratories, the library, and the principal's office, is not yet built. The building in its present form is in no sense a model. The separation of the rooms in which machinery will run from the rest of the building by heavy, double, brick partitions on either side of a stairway, we think to be an admirable feature. The mill construction adopted throughout is objectionable, on account of the ease with which sound is transmitted from story to story.



MECHANIC ARTS HIGH SCHOOL, BOSTON, MASS.
FIRST FLOOR.



In round numbers, the cost of the plant has been—

Land	\$40, 000
Building	146, 000
Equipment	33, 000
The projected wing will cost about	50, 000
Additional equipment	4, 000
Total	273, 000

When complete the building will comfortably accommodate 316 pupils, and with another shop on ground already bought, 460.

THE MANUAL TRAINING HIGH SCHOOL OF DENVER.

This building, which is shown in five cuts, is for both sexes. At present writing (November, 1894) that portion containing the library, offices, and auditorium is not built; the rest of the building has been in use since September, 1893. The following descriptions and data are from the architect, Mr. Robert S. Rauchlaub, of Denver.

DESCRIPTION OF THE MANUAL TRAINING HIGH SCHOOL OF DENVER.

This building is constructed of stone, pressed brick, and iron.

The dimensions of the school building proper (including the unfinished wing) are 139 by 125 feet, three stories in height, with basement; and the shops are 117 by 86 feet, two stories high, except the forge room, which is but one story in height.

Although the school and shops are one continuous building, they have independent walls, joining, with a 2-inch space between to prevent the jar of machinery from being transmitted to the school building, and the passageway from one building to the other is protected against fire; communication is by iron sliding doors.

The shop buildings are constructed of glass and iron mainly to give ample light.

The building is heated and ventilated by steam and fan system. Two 72-inch fans, taking fresh air through a tempering chamber, drive it through a steam coil containing 5,500 square feet of heating surface; thence through ducts beneath the basement floors to the rooms. A subduct conveys cool air to the rooms, the two currents being mixed to proper temperature at the base of the rising ducts or flues by means of the Johnson automatic heat regulating device, while the vitiated air is driven out through flues leading to the top of the building.

The basement.—In the basement of the school building are arranged the boys' and girls' lavatories and closets; the janitor's quarters, comprising 5 rooms; the pupils' lunch room, 55 by 62 feet; bicycle rooms; janitor's closets, etc. Under the shops are the boiler room, 42 by 32 feet; coal bin, shaving chute, waste and scrap chute, fan room, engine room, 44 by 32 feet, and cold-air entrance duct.

The dining room is 55 by 62 feet, well lighted, fitted up with kitchen conveniences, and is furnished with neat tables and chairs.

The upper floors.—On the upper floors, opening from the main halls, are 8 class rooms, each about 36 by 29 feet, fitted up with slate tablets on two sides of the room and giving place for 54 desks.

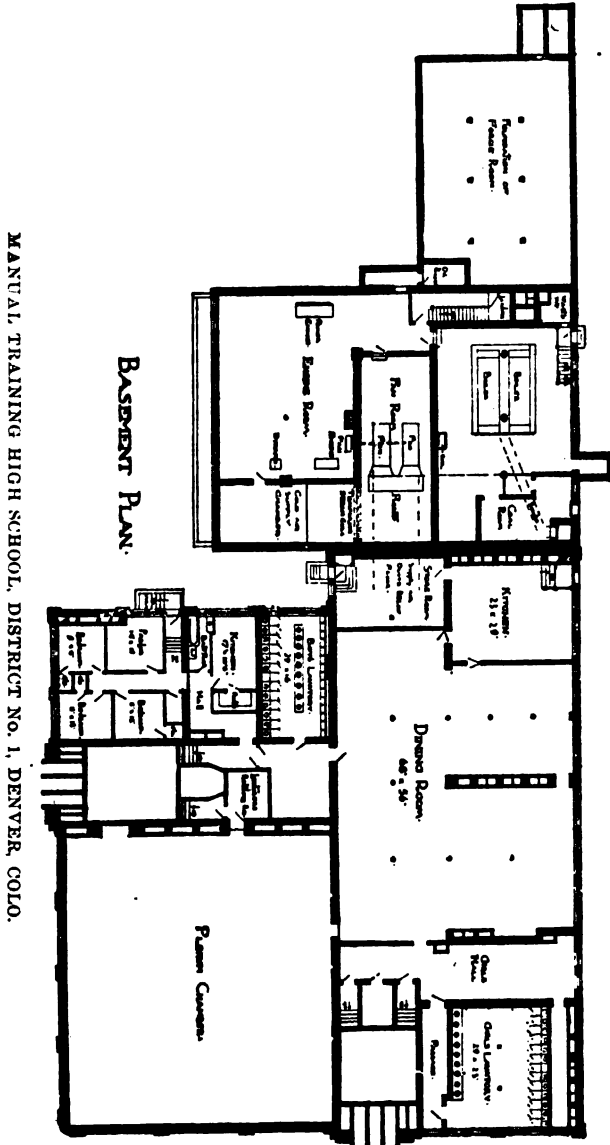
Over the assembly hall are [to be] two drawing-rooms, one 36 by 62 feet and the other 33 by 62 feet, having both side and sky lights. The free-hand drawing-room is fitted up with screens and easels, and the mechanical drawing-room with 25 oak drawing tables. Each table accommodates two pupils at a time; each pupil has a separate compartment for two drawing boards and paper, and a drawer for inks and instruments. As each table is provided with 12 such compartments and drawers, the 25 tables accommodate 6 classes of 50 pupils each, or 300 students, each one



MANUAL TRAINING HIGH SCHOOL, DISTRICT No. 1, DENVER.

having his or her work and instruments locked in a separate compartment and drawer. Detail tables, paper rolls, etc., are also provided.

Upon the third floor is the cooking room, 50 by 39 feet, furnished with 12 double cooking tables for 25 pupils, 2 ranges, 1 coal and 1 gas, a storage room, fitted up with bins and shelves, and the instructor's table.



The physical laboratory is 36 by 46 feet, furnished with an instructor's table, with sink, cupboards, etc.. 32 feet of standing tables with drawers, and 72 ordinary tables with chairs.

The adjoining apparatus room is fitted up with all the conveniences for keeping apparatus.



DENVER MANUAL TRAINING HIGH SCHOOL—LATHE DEMONSTRATION, PATTERN SHOP.



DENVER MANUAL TRAINING HIGH SCHOOL—PATTERN SHOP.

The chemical laboratory is [to be] 37 by 52 feet, furnished with cupboard tables containing 60 sinks and 60 lecture chairs. Adjoining are the professor's private laboratory and hooded sinks. The sewing room is [to be] 48 by 44 feet, furnished with cutting tables, supply closets, drawers, lockers for 25 pupils, fitting screens, and sewing tables.

The shops and their furnishings.—The machine shop is 60 by 32 feet, and will contain the usual iron-working machinery. The tool room is fitted up with bench, lathe, special tool racks, supply rack, etc. The molding room is 37 by 32 feet, fitted up with 25 molding bins, a small cupola and core oven. The forge room is 54 by 35 feet, fitted up with 25 Buffalo forges and one brick instructor's forge, with hand bellows. Adjoining are the coal and cinder bins. The arrangement of the forges is such as to bring each pupil under the instructor's eye.

The pattern shop is 60 by 32 feet, fitted up with 24 carpenter benches, 25 lathes, 2 grindstones, 1 hand saw, and separate bench and lathe for the instructor. Cupboards are provided for supplies and the work turned out by the pupils. The power in this shop is derived from a dynamo.

The carpenter shop is 52 by 32 feet, fitted up with 26 benches, besides the instructor's bench. Each bench is provided with an adjustable and removable carving table. Each of these shops is provided with special tool cupboards, and storage cupboards having sliding doors or screens. At the instructor's benches are forms for the accommodation of the class of 25 pupils.

The workbench is of oak, and accommodates two pupils. It contains six drawers for small tools and work and racks for larger tools.

Over a portion of the forge room is the lumber room, with drying kiln. It contains a buzz saw and universal woodworker.

The cooking class is not yet organized and the cooking room is being used temporarily as a mechanical drawing-room, the furniture of which cost \$1,219. The physical laboratory furniture, exclusive of chairs, cost \$448. The chemical laboratory class is not yet formed, and this room is temporarily used by the sewing class, for which the furniture cost \$121.

As may be seen by the plans, basement, shops, and in fact every part of the house is thoroughly lighted.

The forge room has about 1,650 square feet of glass in the windows, the room being 19 feet high. The machine and pattern shops are 16 feet high, and contain about 1,150 square feet of glass.

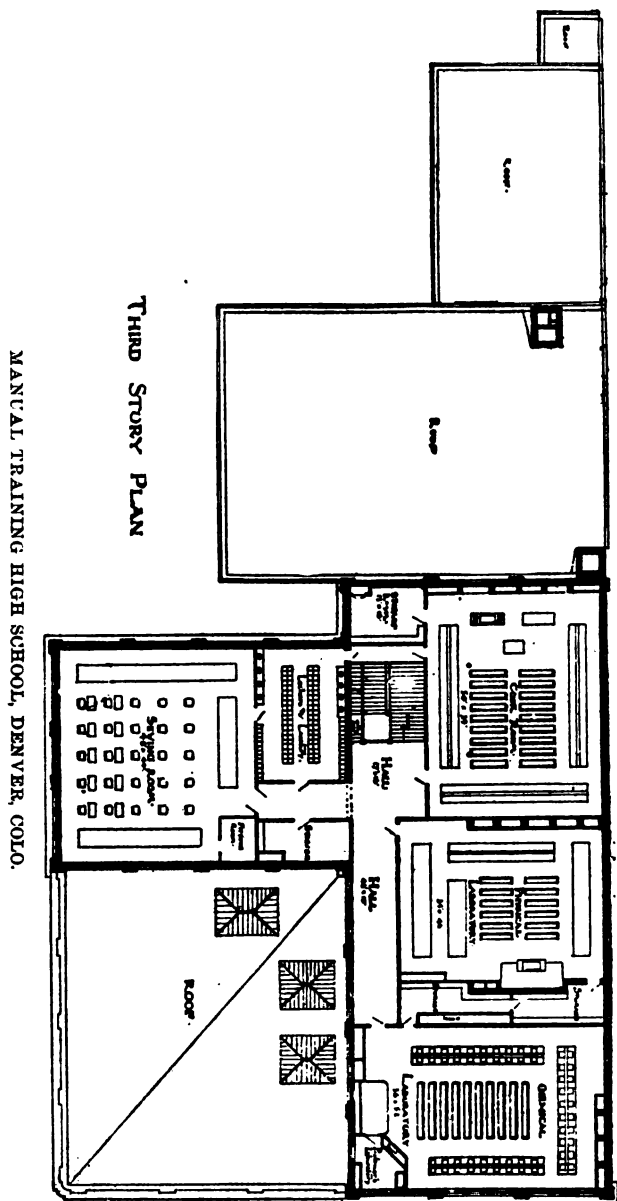
Two interior views of pupils at work are given. One shows a class watching a teacher showing the proper use of a tool at a wood lathe, and the benches provided for the class. The absorbing interest exhibited by the boys is characteristic of every day's experience, no matter how old the school may be. The second shows a shop remarkably well lighted.

The cost of this splendid building, entire, when finished, exclusive of furniture and including sidewalks, copings, etc., is estimated at \$143,442. The actual cost of the parts completed was \$85,442.

The cost of certain shop furniture was as follows:

Pattern shop:

Lathes, band saw, and grindstones.....	\$1,274.00
Benches, cupboards, etc.....	1,033.19
Shafting and belting.....	824.38
Dynamo, furnished with current from the city plant.....	198.00
Total pattern shop.....	3,329.57
Molding room fixtures.....	60.00
Benches, cupboards, etc., in carpenter shop.....	824.00
Carving table.....	172.50
Wash troughs in lavatory of shop, complete.....	1,500.00
Dining room fixtures.....	280.00



THE MANUAL TRAINING HIGH SCHOOL OF LOUISVILLE, KY.

The buildings of this school are shown in the cuts. The general arrangement is in accord with an outline suggested by the writer. The details, however, were worked out by Mr. Kleinschmidt, the principal. The characteristics of the plan are four in number, viz:

(1) The shops are put in a separate building, sufficiently removed to avoid disturbing the class rooms by noise or vibration.

(2) The shops are still very accessible by means of a covered walk at the ground floor, and an inclosed bridge from the second floor, which leads to a landing between the second and third floors of the shops. The inclosed bridge is finished like the schoolrooms and is kept comfortably warm in cold weather; in fact, it forms part of the wardrobe of the school.

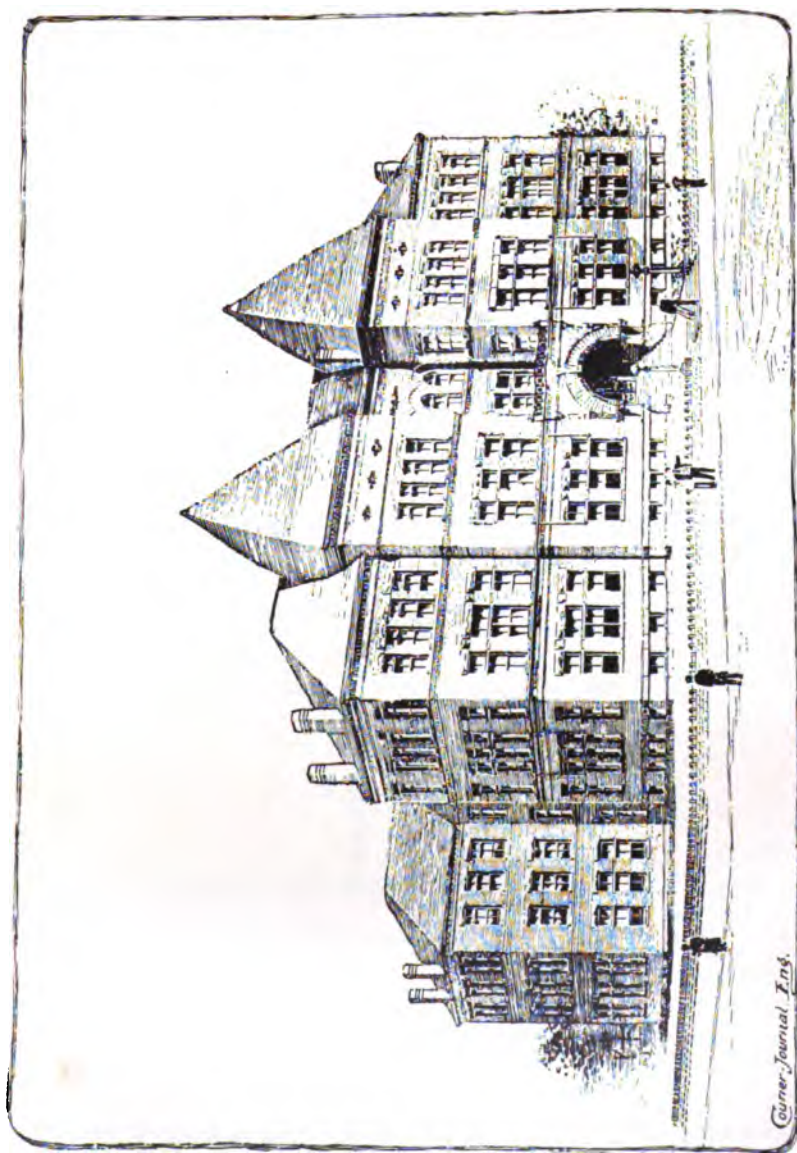
(3) Every shop has in immediate connection with it a lavatory, so that boys have no occasion during shop hours to pass beyond the immediate care of the shop teacher.

(4) All the machinery of the shops is driven by electric motors, so that every shop is independent of every other shop; its machinery can be at rest or in motion without in any way affecting the others. The practical convenience of this independence is very great. If the electric motors were supported by overhead hangers, so as to be beyond ordinary reach and to occupy no floor space, the arrangement would be perfect.

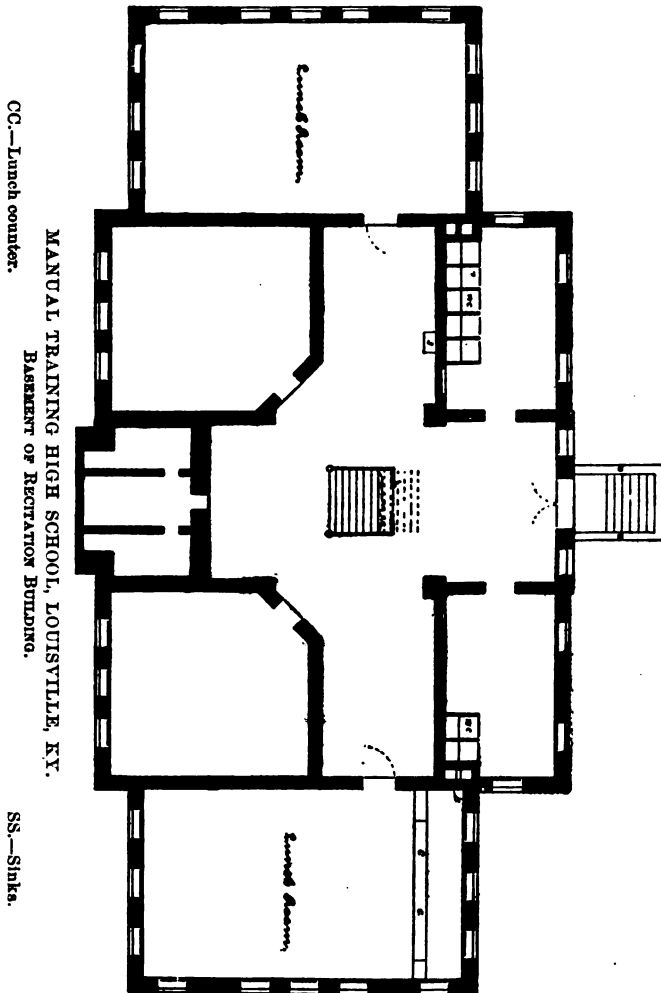
Each of the shops is 45 feet square with an offset 14 by 25 feet, in which the instructor gathers his class on movable benches when he gives the class general instruction. All the shops are admirably lighted and furnished. Each can receive three divisions of 24 pupils every day. Each of the woodworking shops has both benches and lathes. A 10-horsepower motor drives the 25 lathes (1 being exclusively the teacher's lathe) and the grindstones.

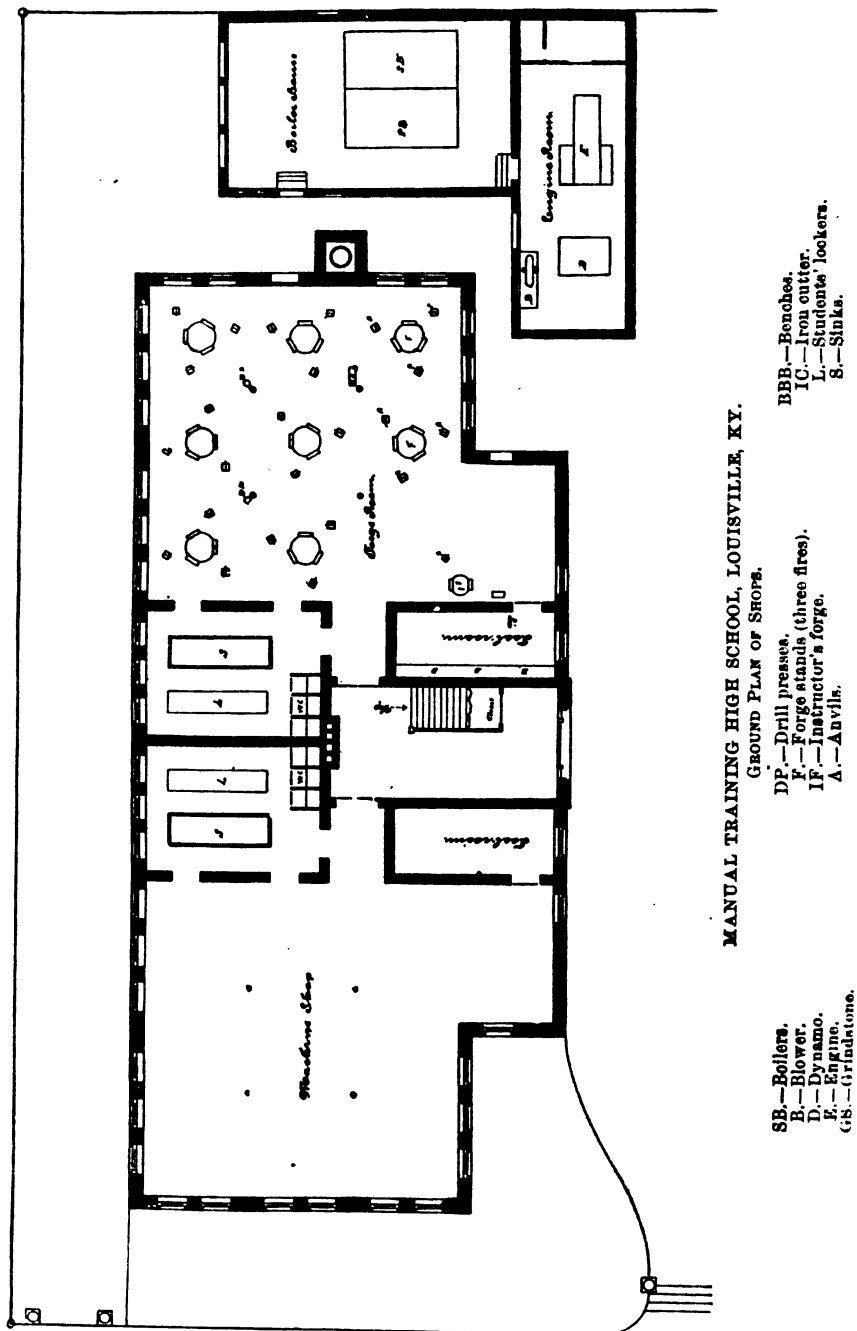
The forging shop is well lighted and conveniently arranged. Temporary benches half surround the instructor's forge and anvil, so that the class can sit comfortably in a position to see and hear all that the teacher does and says, as he illustrates a new process or expounds a new principle. The arrangement of forges is such that the smoke ducts are readily united at the exhaust fan near the chimney. Twenty-five open coal fires in one room suggest an atmosphere laden with gas and soot to an intolerable degree, and yet a fan easily creates such a draft that with proper air inlets from the hall (or windows in mild weather) the air in the shop is reasonably pure. One improvement is, however, necessary in this Louisville shop—viz, the fan should be inclosed behind brick walls in a sort of closet, so that its noise may not be heard to any great extent in the shop.¹

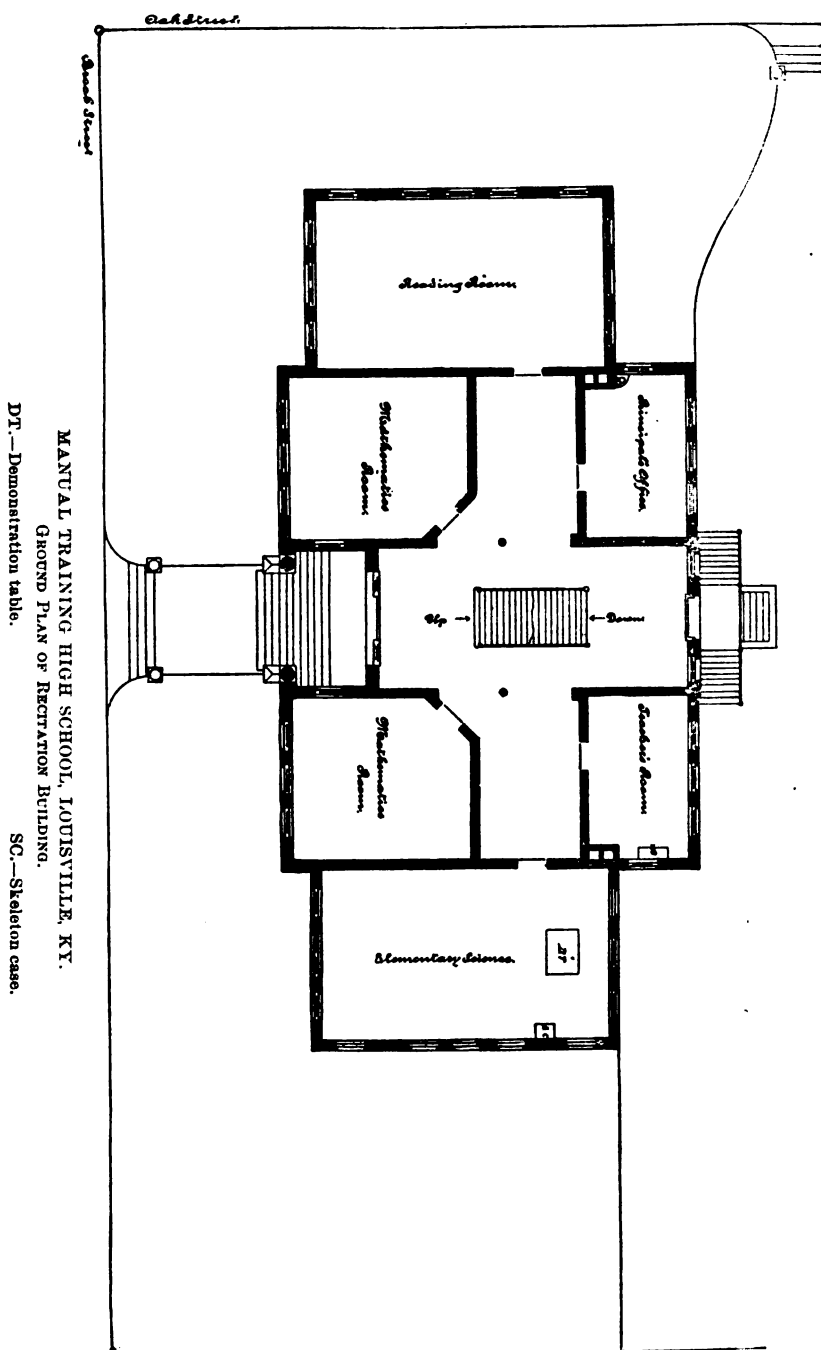
¹ The evil may be remedied easily, and possibly before this account is in print the fan may be inclosed.



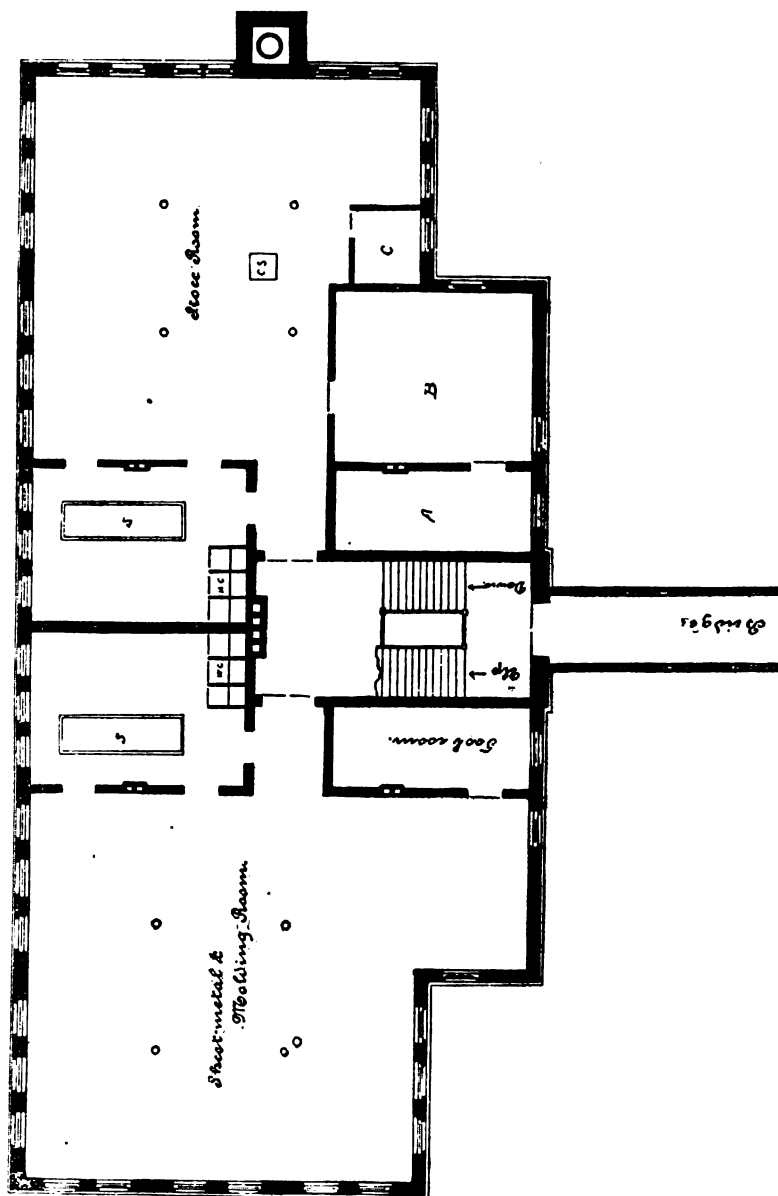
MANUAL TRAINING HIGH SCHOOL, LOUISVILLE, KY.



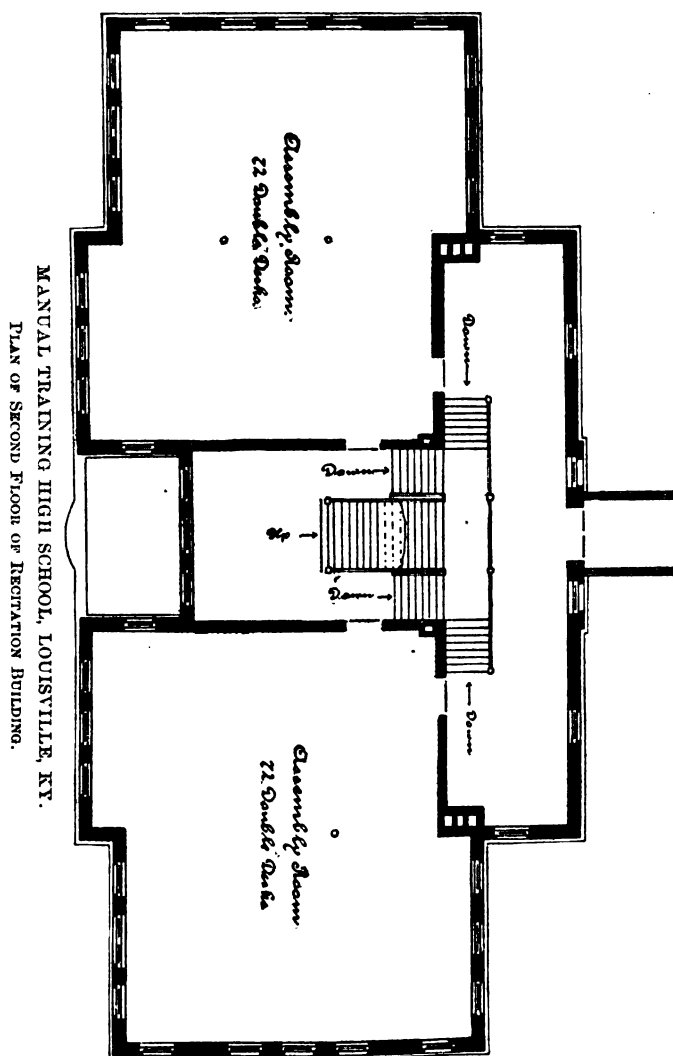


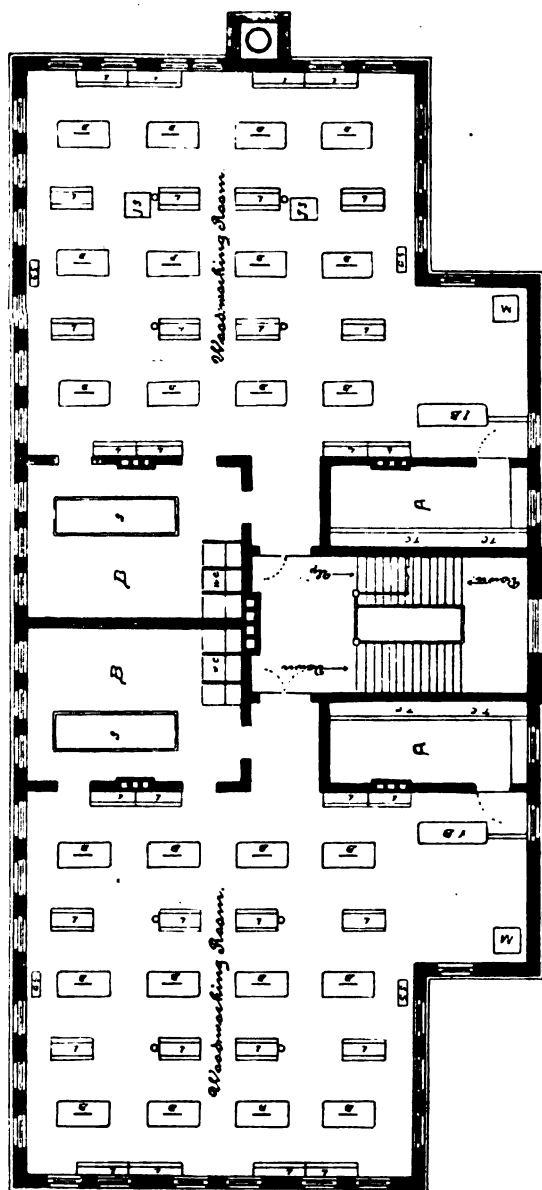


MANUAL TRAINING HIGH SCHOOL, LOUISVILLE, KY.
GROUND PLAN OF RECREATION BUILDING.
DT.—Demonstration table.
SC.—Skeleton case.



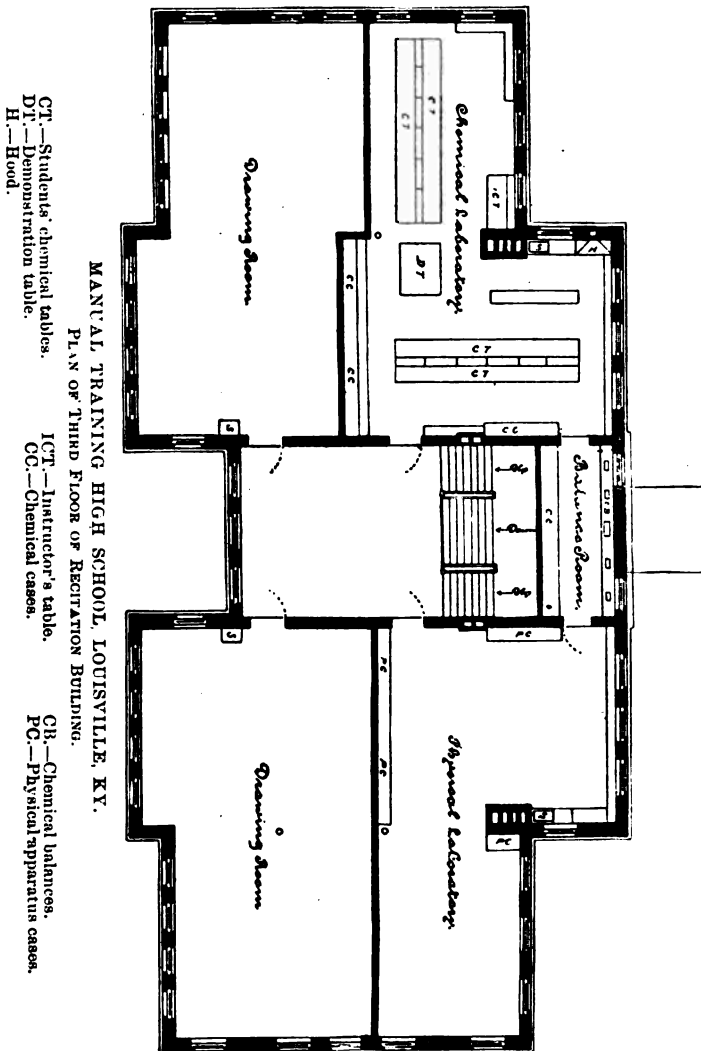
MANUAL TRAINING HIGH SCHOOL, LOUISVILLE, KY.
 PLAN OF SECOND FLOOR OF SHOPS.
 CS.—Circular saws. SS.—Sinks. ABC.—Janitor's rooms.





S.—Sink.

JS.—Jig saws.
M.—Electric motors.IB.—Instructors' benches.
L.—Lathes.TC.—Tool cases.
R.—Students' benches.MANUAL TRAINING HIGH SCHOOL, LOUISVILLE, KY.
PLAN OF THIRD FLOOR OF SHOP.



The provision for housing the janitor and family is important, as the large amount of valuable hand tools in the building renders it necessary to have some person always there at night and during the vacation period.

Speaking of his building plans, after two years of use, Mr. Kleinschmidt says he would make a single change in the shop, viz: He would omit the door leading from the forging shop to the engine house, making it a window instead. In the front building, however, he would make several changes; in particular, he would use less space for halls on the first floor and enlarge the rooms for mathematics.

The following items of cost will be highly appreciated:

The cost was as follows—

Front building	\$32, 833
Shop	28, 500
Engine and boiler house	3, 150
Bridge.....	525
Cost of buildings	<u>65, 008</u>

Cost of equipment—

Boilers, engine, and blower	3, 350
Dynamo	1, 800
Three motors	1, 600
Tools and machinery for shops	15, 000
Furniture and apparatus for academic building.....	10, 000
Total equipment	<u>31, 750</u>
Grand total cost of plant.....	<u>96, 808</u>

The value of the land is not included. The buildings are planned to accommodate 300 boys. The equipment of the machine shop alone cost \$8,500.

COST PER PUPIL PER YEAR.

No practical question is more important than that of cost. Accordingly, below are given the figures from 5 schools. The reader must bear in mind that in this connection cost includes the running expenses of the entire school—literature, science, mathematics, drawing, and shop work; the maintenance of tools, supplies of materials, chemicals, apparatus, fuel, repairs, salaries, wages, water, gas, etc.—everything but insurance and large additions to the plant or equipment. To find the cost per pupil per year the total expense has been divided by the total enrollment.

St. Louis Manual Training School:

1891-92	\$70. 30
1892-93	82. 50
1893-94	85. 00

Chicago Manual Training School (Dr. H. H. Belfield, director):

1891-92	74. 74
1893-94	90. 07

Louisville Manual Training School:

1893-94	97. 80
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Philadelphia Central Manual Training School:

1892-93	90.00
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North East Manual Training High School, Philadelphia:

1892-93	94.10
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1893-94	92.29
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THE FRUITS OF MANUAL TRAINING.

Nothing better illustrates a course of training than high-minded men, efficient workers, good citizens, good leaders, and good followers, who as pupils enjoyed its advantages. The Honorable Commissioner of Education requests that this sketch be followed by as complete a record as can be given of the career of the graduates of the St. Louis Manual Training School. Those graduates already number some 550, and the oldest class, that of 1883, has been in active life eleven years. Such persons have had time to show the peculiar influence of their training, if such influence exists.

Accordingly, the classes are given below in full. In all cases the latest authentic information is given. A brief summary will be given at the end of the lists. Most of the young men can be reached by letter, if one wishes either to confirm the record or to get the mature opinions of graduates.

The writer well knows the danger of overestimating the value of these records. He knows that the causes of success and failure in the careers of young men are very complex, and the effects of heredity and environment are easily confused with the influence of schooling. At the same time, it is evident to all that we must and do judge schools and systems by the men they turn out.

The writer leaves conclusions to the reader; he adds only a caution, that if these records are to be compared with the records of other schools, some allowance should be made for those who attended the schools in either case but failed to graduate. For example, take 1,000 boys who entered the Philadelphia Manual Training Schools and another 1,000 boys who entered the literary high school of that city and see what has become of them. The fact that they did or did not complete the course of the school is an important element in the general result and should by no means be neglected. If five out of ten boys graduate in one case and only one out of ten in the other, a comparison of the graduates alone is evidently inadequate. With this caution, the lists are submitted.

PRESENT OCCUPATIONS OF THE GRADUATES OF THE ST. LOUIS MANUAL TRAINING SCHOOL, OCTOBER, 1894.

Class of 1883.

Henry H. Bauer, farmer, Dorchester, Ill.

John Boyle, jr., E. M. (W. U., 1888), mining engineer, 3618 Washington avenue.

John L. Bryan, general manager American Cob Pipe Company, Washington, Mo.

Alexander W. Buchanan, M. E. (Cornell, 1887), mechanical engineer, National Cash Register Company, Dayton, Ohio.

- Peyton T. Carr, real-estate agent, 16 North Eighth street.
 Edward E. Davidson, in real-estate business and manager of the Economy Steam Heat Company, St. Paul, Minn.
 Cornelius V. De Jong, draftsman, Chicago, Ill.
 Harry Deitrich, vice-president James Jones Brass Manufacturing Company, Belleville, Ill.
 William S. Dodd, bookkeeper, Laeledge Gaslight Company.
 Henry F. Dose, Freeburg, Ill.
 Wm. J. Downton, draftsman, with the Cornelius Mill Furnishing Company.
 Leo. Gluck, E. M. (W. U., 1889), mining engineer for the Spring Valley Coal Company, Spring Valley, Ill.
 S. D. Hayden, architect, Boston, Mass.
 Robert L. Hyatt, farmer, Florissant, St. Louis County.
 Conrad S. Ittner, was foreman bricklayer. Died April 11, 1891.
 Wm. B. Ittner, architect, Union Trust Building.
 Albert L. Johnson, B. E. (W. U., 1887), assistant engineer on timber testing, Department of Agriculture, Washington, D. C.
 Wm. Love, B. E. (W. U., 1888), consulting engineer and contractor, Chicago.
 Harry W. Lytance, real-estate business in Chicago.
 Robert H. McMath, B. E. (W. U., 1886), surveyor of the St. Louis Board of Fire Underwriters, Gay Building.
 Otto L. Mersman, real estate (Nelson & Mersman), 106 North Eighth street.
 Wm. G. Nixon, chief clerk purchasing department Missouri Pacific Railway, 2227 Walnut street.
 Everett G. Phillips, was brass founder. Deceased.
 Wm. K. Roth, Adam Roth Grocer Company, 3201 Locust street.
 Justus W. Schmidt. Lives in Europe.
 Greenfield Sluder, M. D. (1887), instructor in clinical medicine, Medical School.
 Jules C. Smith, foreman machine shop, Cudahy Packing Company, Omaha, Nebr.
 Herbert DeQ. Taylor, traveling salesman for powder company, 507 North Third street.
 John P. Thul, B. E. (W. U., 1887), mechanical engineer and architect.
 John F. Valle, cashier and bookkeeper, 5 Benton Place.

Class of 1884.

- Grant Beebe, B. E. (1888), teacher of manual training, public schools, Chicago.
 A. Theodore Bruegel, M. E. (1888, Lehigh University), instructor in mechanical engineering, Cornell University, New York.
 Geo. R. Carothers, M. E. (Rose Pol.), director manual training school, Olympia, Wash.
 Walter De Rosset Coles, LL.B. (1889), attorney, Security Building.
 Claud N. Comstock, C. E. (1888, Columbia College, New York), real estate, St. Joseph, Mo.
 Geo. D. Eaton, teacher, Wyman Institute, Alton, Ill.
 Alfred C. Einstein, manager Aztec Mining Company, Silver City, N. Mex.
 Hamilton R. Gamble, secretary and treasurer, Abbott-Gamble (Engineering) Contracting Company.
 Charles D. Grayson, clerk, with Ely, Walker & Co.
 Geo. N. Hinchman, head draftsman, Riverton Machine Company, Cuyahoga Falls, Ohio.
 Ernest C. Klipstein, architect (Massachusetts Institute of Technology), Champaign, Ill.
 Charles S. Langdon, agent of Isaac D. Smead & Co., engineers, Kansas City, Mo.
 James L. Marks, machinist.
 Constant Mathey, salesman with Mermod, Jacard & Co.

- Ralph H. Miller, architect (Massachusetts Institute of Technology), Portland, Oreg.
 Geo. S. Mills, architect, with Mills & Wachter, Toledo, Ohio.
 William O'Keefe, traveling salesman Excelsior Manufacturing Company, 3520 Lindell avenue.
 Otto H. Olfe, draftsman with Pullis Bros. Iron Company.
 Harry Pflager, mechanical inspector Pullman Car Company, 4019 Olive street.
 John H. Pope, B. E. (W. U. 1888), assistant engineer, Union Bridge Company.
 Edward L. Prectorious, business manager, Westliche Post.
 Wm. F. Richards, clerk in office of Chicago and St. Louis Electric Railway Company.
 Harry C. Scott, cashier, Mound City Paint and Color Company.
 Percy S. Silver, packer of canned goods, and contractor of canning plants, Lexington, Mo.
 Charles F. Springer, real estate, 85 Washington street, Chicago.
 H. Reed Stanford, B. E. (W. U. 1888), metallurgist, Buffalo Malleable Iron Works, Buffalo, N. Y.
 Homer Wise, superintendent manufacturing department National Linseed Oil Company, Chicago.
 Edmund H. Wuerpel, artist, instructor life class, St. Louis School of Fine Arts.
 Harry B. Wyeth, secretary and treasurer Wyeth Lumber Company, 413 Temple Building.

Class of 1885.

- Wm. F. Barnes, teacher of drawing, Manual Training High School, Louisville, Ky.
 Hatcher Bates, farmer, Dardenne, St. Charles County, Mo.
 A. M. Bumann, partner, Bumann Manufacturing Company, Litchfield, Ill.
 King Charles Barton, agent, Omaha and Grant Smelting and Refining Company, Valardeña, Mexico.
 Judson S. Bemis, secretary of the Bemis Brothers' Bag Company.
 Edgar L. Brother, superintendent of manual training, Denver High School, Colo.
 Thomas W. Booth, grain business (J. W. Booth & Sons), 4010 Delmar avenue.
 Albert H. Buck, engineer of mines (1892), Perth Amboy, N. J.
 Edward H. Chapman, 1033 North Compton avenue, surveyor, St. Louis Water Works.
 George W. Danforth, Engineer Corps, United States Navy.
 H. G. Ellis, LL. B. (1891), attorney at law.
 Arthur Feickert, baker and confectioner, Belleville, Ill.
 Charles O. Fisher, secretary and treasurer Pitzman Company, surveyors and engineers, 615 Chestnut street.
 Wm. F. Hopper, foreman of pattern shop, Curtis Manufacturing Company.
 Clarence B. Howard, secretary Pintech Gas Car Lighting Company, Union Trust building.
 H. F. A. Klienschmidt, principal Manual Training High School, Louisville, Ky.
 Albert Koberle, E. M. (W. U. 1890), secretary and treasurer of "The American Engineering Company," 324-326 Rialto Building.
 Frederick A. Laclede, teacher.
 Wm. P. Laing, manager Laing Cycle Company, 1728 Olive.
 Edward L. Lange, American Preserves Company.
 Ernest E. Lasar, machinist, with G. H. Lasar, 910 Autumn street.
 Louis D. Lawnin, clerk, N. O. Nelson Manufacturing Company.
 Edward H. Lebens, special tax department, city hall.
 John J. Lichter, jr., D. E. (W. U. 1890), civil engineer, Union Depot Railway.
 Wm. Alex. Magee, superintendent shopwork and drawing, Lincoln Institute, Jefferson City, Mo.
 Frank W. Morse, master mechanic, Wabash Railroad Company, Fort Wayne, Ind.
 Frank E. Nulsen, superintendent Missouri Malleable Iron Company, East St. Louis.

Geo. R. Olsbausen, D. E. (W. U. 1890), superintendent C. O. Knoblauch's Chemical Works.
 Charles M. Parker, C. E. (Troy, 1889), assistant engineer, Terminal Railway.
 Frank S. Reel, LL.B. (W. U. 1890), attorney, Wainwright Building.
 Louis C. Rohlfing, M. D., physician, 1512 St. Louis avenue.
 Edward H. Rottmann, in business with his father.
 James L. Sloss, director Bauer Grocer Company.
 Edward Smith, superintendent saw and planing mill, Potosi, Mo.
 Geo. M. Stedman, vice-president and general manager Stedman's Foundry and Machine Works, Aurora, Ind.
 J. Harrison Steedman, B. S. (W. U. 1889), vice-president Curtis & Co. Manufacturing Company.
 Hamilton W. Stone (Hughes & Stone) Heating Company.
 Wm. W. Treadway, machinist, was with the Lansberg Brake Company.
 Harry L. Whitman, in business with his brother.
 Charles H. Wright, teacher of manual training, Throop University, Pasadena, Cal.

Class of 1886.

Bruce C. Alvord, jr., United States Treasury Department, custom-house.
 Fred A. Baier, superintendent, Brownell Car Company, residence 3211 Harper street.
 Alfred C. Beebe (chemist, 1891), chemist, Chicago and Aurora Smelting and Refining Company, Aurora, Ill.
 Daniel F. Behrens, assistant bookkeeper, Schulenburg & Boeckeler Lumber Company.
 Charles L. Bouton, M. S. (1891), student, post-graduate, mathematics, Harvard University.
 Charles W. Cahoon, superintendent Waters-Pierce Oil Company, Dallas, Tex.
 Daniel L. Clifton, 2944 Laclede avenue.
 Harry Marcy Coudrey, insurance (Coudrey & Scott), 119 North Third street.
 Edward L. Dillon, superintendent Pine Bluff Water and Light Company, Pine Bluff, Ark.
 Edward B. Fay, C. E. (1891), assistant engineer, with Geo. S. Morrison, bridge engineer, Chicago, Ill.
 W. Adin Field, died while a student at De Pauw University.
 Chas. H. Gardner, hardware merchant.
 Henry Gwinner, superintendent of shopwork, Agricultural and Mechanical College of Maryland.
 Wallace Harker, M. D., now in San Francisco.
 Oscar F. Hartman, clerk with Sells & Co., 1930 Louisiana avenue.
 Joseph Rawlins Hickman, contracting freight agent, Atchison, Topeka and Santa Fe Railway, Fifth and Chestnut streets.
 Samuel D. Hodgdon, student, St. Louis Law School.
 Charles H. Hopper. Died October 27, 1893.
 Boone Van H. Johnson, draftsman, New York, Hartford and New Haven Railway, New Haven, Conn.
 Geo. D. Johnson, assistant superintendent Mississippi Glass Works.
 Wm. C. King, traveling salesman, with Samuel Cupples Woodenware Company.
 Robert H. Laing, clerk, Cotton Belt Railway.
 John B. Leggat, superintendent Argyle Mine, Butte City, Mont.
 Wm. M. Louderman, vice-president Illinois Supply and Construction Company, 86 Olive street.
 Ludlow Maury, recorder with Missouri River Commission.
 John A. McLean, manager manufacturing company.
 H. N. Mayo, M. D. (1895, Baltimore Medical College.)
 John N. McQuilkin, was a teacher of manual training. Died November 19, 1891.

Herman C. Meinholtz, superintendent Heine Safety Boiler Company.
 Richard G. Mincke, clerk, Tamm Glue Company.
 George R. Rice, jr., clerk, Wabash Railway Company.
 Edward O'Neal Shotwell, clerk, with Carter & Bowman.
 Wm. H. Slicer, draftsman, Cincinnati, Ohio.
 Charles B. Spicer, traveling salesman, Hazard Powder Company.
 John B. Steinert, principal of manual department, State Industrial School, Waukesha, Wis.
 Wm. J. Stelzleni. Died April 14, 1894.
 Wm. J. Stewart.
 Henry J. Stiller.
 George T. Thompson, superintendent manufacturing works, Station B., Laclede Gas Works, Main and Howard streets.
 Hugo E. Wangelin, dentist (D. D. S.), 608½ Nicollet avenue, Minneapolis, Minn.
 Gustavus E. Wetzel, jr., student, St. Louis Law School.
 Rowland Lee Wilson, secretary Olney Artificial Ice and Cold Storage Company, Olney, Ill.
 Louis E. Winter, jr., assistant bookkeeper Missouri Car and Foundry Company.
 Wm. C. Zelle, engineer of mines (1892), representing Genesee-Vanderbilt Mining Company.
 Louis F. Zepp, deputy recorder, court-house.

Class of 1887.

Herman D. Armour. Deceased.
 Albert H. Bsier, B. M. E., 1894 (W. U. 1894), draftsman, Consolidated Engineering Company.
 Frank E. Bauer, manager of stock and grain farm, Bunker Hill, Ill.
 Frank C. Blelock, treasurer, Providence Jewelry Company.
 Walter A. Boeck, LL. B. (1894), with Adam Boeck & Co., real estate and loan company.
 Richard A. Boyle, real estate.
 William B. Brenecke, C. E. (1892), assistant engineer, Terminal Railway Association.
 James H. Brookmire, jr., with J. H. Brookmire & Co., 2733 Lucas avenue.
 Harry D. Chapman, Sioux National Bank, Sioux City, Iowa.
 William H. Danforth, M. E. (1892), manager Purina Mills.
 Edward R. Fish, M. E. (1892), assistant engineer, Heine Safety Boiler Company.
 John R. Fordyce, E. M. (1892), 3634 Washington avenue.
 Wm. B. J. Frain, with Samuel Cupples & Co., 4327 Warne avenue.
 Wm. Allan Gardner, bookkeeper, Francis Axe Company, Buffalo, N. Y.
 Hallock F. Gillet, salesman with Willemssen Belting Company.
 Willis V. Graves, steam engineer, Hydraulic Press Brick Company, 2813 Lafayette avenue.
 Charles S. Greene, of Greene & Greene, architects, Pasadena, Cal.
 Wm. R. Grier, secretary and treasurer Colorado Tie and Lumber Company, Denver, Colo.
 Henry F. Hammel, 3649 Clark avenue.
 Michael H. Isaacs, superintendent Jewish Orphan Asylum, Cleveland, Ohio.
 Oscar A. Keliy. Died 1892.
 Chas. P. Lampel, Interstate Complete Electric Construction Company.
 Berthold A. Lange, LL. B. (1891), attorney at law and notary, 3738 South Jefferson avenue.
 Samuel A. Larkin, machinist, Missouri Pacific shops, 2630 Randolph street.
 Wm. H. McCormack, clerk with Bemis Bros. Baggage Company.
 Gustave D. Meisner, farming, Bushberg, Mo.
 Landon C. Metcalf (B. Ph. 1893, Washington University), teacher of mathematics, Manual Training High School, Louisville, Ky.

Ferdinand Moll, *Traveler's Insurance Company*.

William A. Ocker, teacher of physical culture, *Hughes's High School*, Cincinnati, Ohio.

Victor H. Poss, C. E. (Cornell, 1892), assistant United States engineer, Mississippi River Commission, custom-house.

Jacob F. Ratz, deceased.

Charles B. Rearick, assistant engineer of machinery, *Brooks Locomotive Works*, Dunkirk, N. Y.

William Cochran Reel, M. D., physician.

Albert A. Rehbein, clerk, *Simmons Hardware Company*.

Lloyd H. Rickart, with *United Elevator Company*.

Denny W. Roper, electrical engineer (Cornell University, 1893), Alton, Ill.

Wilfred Schade, of Wilfred Schade & Co., customs brokers, 810 Olive street.

Adolph Schenk, jr., bookkeeper, *German American Bank*.

George A. Schlosstein, manager *Dunkirk Window Glass Company*, Dunkirk, Ind.

Alvin H. Schureman, paying teller *Continental National Bank*.

Frank R. Schureman, orange grower, Pomona, Cal.

Charles H. Speer, draftsman, with *St. Louis Iron and Machine Works*.

George F. Steedman (A. B., Harvard), superintendent, *Curtis Bros. Manufacturing Company*.

Edmond A. Thomas, secretary *Fox Bros. Manufacturing Company*.

William F. Thompson, clerk, *Missouri Pacific Railway*.

John W. Valliant, A. B. (Princeton, 1891), attorney and counselor at law, 417 Pine street.

John C. Van Dorn, secretary and treasurer *Iowa Candy Company*, Sioux City, Iowa.

James Harrison Whittaker, merchant, *Summerfield*, Ill.

Clarence G. Wilgus, farming, *Whitehall*, Ill.

George H. Wolbrecht, United States assistant engineer, with *Mississippi River Commission*, 2732 Pine street.

Charles L. Woodruff, traveling salesman, *William A. Orr Shoe Company*.

Alfred Woolf, with *Rice, Stix & Co.*

Class of 1888.

John McCune Allen, 3424 Pine street, machinist, *Pacific Lock and Seal Company*, Olive street.

George Y. Bast, proprietor and manager electric company, *Vandalia*, Mo.

Wm. Herbert Bouton, C. E. (1893), assistant engineer, city waterworks.

Gustave Ernst Bruere, M. D. (1891), Washington avenue and Twenty-seventh street.

L. Dutihl L. Cabanne, agent *Continental and Eagle Fire Insurance Companies*, 304 North Third street.

Edward P. Clark, jr., foreman, with *Ripley and Bronson*, 907 North Main street.

Wilbur Graham Cory, draftsman, with *New York, Hartford and New Haven Railway*, New Haven, Conn.

William N. Cummings, E. M. (1893), assistant superintendent, *Aurora Smelting and Refining Company*, Aurora, Ill.

Clarendon Davis, manager of stock farm, *Huntsville*, Ala.

James M. Dudley, clerk, 3573 Olive street, *St. Louis post-office*.

Albert A. Ehrhardt, mechanical engineer (1894), assistant in testing laboratory, *Washington University*.

Walter Eisenmayer, milling business, with the *Eisenmayer Company*, San Diego, Cal.

Sidney A. Fairchild, E. M. (1893), agent for *La Gran Fundicion Nacional Mexicana*, Charcas, Mexico.

Wendell C. Fletcher, 1045 Goodfellow avenue, motor inspector, *St. Louis Electric Power Company*.

Walter H. Fuchs, M. D. (1891), physician, 2229 South Jefferson avenue.

Henry M. Greene, of Greene & Greene, architects, Pasadena, Cal.
 James Alonzo Hance, draftsman, American Brake Company.
 Edward A. Hauss, storekeeper, Michigan Peninsula Car Company, Detroit.
 Charles Hendrich, draftsman, with A. M. Baker, architect, 810 Olive street.
 Emil Hendrich, C. E. (1892), assistant engineer, Grand Avenue Railway.
 Ernst Hoelke, C. E. (1893, W. U.), assistant, timber-testing laboratory, Washington University.
 Louis W. Holy, manager of the Crescent Coal Company, Hesperia, Cal.
 Geo. F. Horneker, M. D. (1893), physician, Eureka, Mo.
 Arno E. Huning, M. E. (1893), assistant mechanical engineer, Cotton States International Exposition, Atlanta, Ga.
 Fred A. Krackauer, draftsman, 115 South Compton avenue.
 Harry Lanitz, 3658 Delmar avenue, shipping clerk, St. Louis Stamping Company.
 John Gates Lewis, secretary and treasurer C. R. Lewis Clothing Manufacturing Company, Jefferson City, Mo.
 Rufus Augustus Lewis, draftsman, with Mr. Annau, architect.
 Wm. F. R. Luedinghaus, superintendent Luedinghaus-Espenechied Wagon Company.
 Evans McCarty, superintendent of Southern White Lead Company.
 Edward C. Meier, assistant engineer, Heine Safety Boiler Company.
 Peter Holme Morrison, M. D. (1891), dentist (1892), 1401 Washington avenue.
 August H. Mundt, inspector, Mississippi River Commission, Sparrows Point, Md.
 William C. Nichols, clerk, Bank of Commerce, 2710 Olive street.
 Albert G. Nulsen, Compton Hill, with manufacturing company.
 Erwin Page, with A. C. Wolfram Electric Company.
 Wm. L. Poppenhusen, in hardware business, Washington, Mo.
 Edward Puchta, M. E. (1892), Longtin and Puchta, steam and hot-water heating, Chicago, Ill.
 Thomas T. Richards, manager Fay Gas Fixture Company, St. Paul, Minn.
 Francis E. Schwentler, 1631 Carr street, head draftsman American Brake Company.
 John Stack, M. D. (1891), physician, East St. Louis, Ill.
 Rezin D. Steele, architect, Galveston, Tex.
 Lewis C. Stone, art student, St. Louis School of Fine Arts.
 Clarence J. Taussig, A. B. (1893, Harvard), student, St. Louis Law School.
 Ralph Day Udell, manufacturer, Indianapolis, Ind.
 Chas. M. Wagely, draftsman, American Brake Company.
 Albert O. Wheeler, surveyor, Mississippi River Commission, 2732 Pine street.

Class of 1889.

Fred. Edward Cox, architect (Massachusetts Institute of Technology), Boston, Mass.
 Robert Stuart Fosburgh, with James Stuart & Co., architects.
 Arthur Albert Fritsch, with Ranken & Fritsch, manufacturers.
 Wm. Lewis Garrels, M. E. (1893, Cornell), representative Fruin-Bambrick Construction Company, Holyoke, Mass.
 Jonathan W. George, assistant librarian Public School Library.
 Jas. E. Godlove, merchant tailor (Godlove & Bauer), 917 Olive street.
 Henry F. Hafner, with Hafner-Lothman Manufacturing Company.
 Frederick A. Hamilton, with N. O. Nelson Manufacturing Company.
 Frederick Adolphus Hart, merchant, Woodville, Miss.
 James R. Harris, draftsman, water department of St. Louis.
 Julius C. Herrman, draftsman, Pullman Palace Car Company.
 Edward C. Hesselbach, entered freshman class, Washington University. Died at his home in Alton, Ill., November, 1889.
 Frank Olin Hicks, of Hicks, Bettes & Co., hardware merchants, Paris, Tex.
 Gustavus G. A. Herzog, M. D., 3219 Bailey avenue.

- Glenn Clark Hill, agent for the Coats Thread Company, 4426 West Pine street.
 Aver Lee Hirsch, LL. B. (W. U., 1892), 1217 St. Ange avenue.
 Ernest M. Hoen, architect, Sacramento, Cal.
 Charles C. Hook, architect, Charlotte, N. C.
 Ernest Cutler Hosmer, with Snow, Church & Co., collecting agency, Minneapolis, Minn.
 Charles Theo. Huber, teacher of music, 1426 South Broadway.
 Benj. W. Johnson, teacher of manual training, high school, Seattle, Wash.
 Burt B. Kauffman, student Yale University, New Haven.
 Wm. Briscoe Kinealy, with Shapleigh & Co. Hardware Company.
 Herman Wm. Korhammer, electrician Suburban Electric Light and Power Company, Old Orchard, Mo.
 Henry Fred Kortjohn, LL.B. (1892), attorney.
 Guy W. Latta, assistant engineer, with Westinghouse Elevator and Manufacturing Company, Pittsburg, Pa.
 Wm. Starr Mitchell, secretary and treasurer Arkansas Democrat Company, Little Rock, Ark.
 Guy Heath Patriarche. Died January 4, 1892.
 Edward S. Pfeffer, Lebanon, Ill., with Pfeffer Manufacturing Company.
 Edwin S. Pitzman, 1900 South Compton avenue, assistant engineer St. Louis, Keokuk and Northwestern Railroad.
 Samuel Plant, 3646 Washington avenue, miller, with Plant Milling Company.
 Harry F. Roach, of H. E. Roach & Son, architects.
 Walter Ellis Ree, machine designer Studebaker Bros. Manufacturing Company, South Bend, Ind.
 Rudolph Rebitzki, draftsman, with Easmuller & Barry.
 Arthur R. Sawyer, Ph. B. (1893, Stanford), teacher of manual training Des Moines high school, Iowa.
 Lincoln Melvin Stearns, assistant superintendent St. Louis Art Metal Company.
 Federico Ramon Seyffert, student National School of Engineering, city of Mexico, Mex.
 Wilson Everett Weatherly, teacher of manual training, Allegheny, Pa.
 Crato Alex. Wippen, surveyor.
 Sherman M. Woodward, M. S. (1893), teacher of science and manual training, high school, Youngstown, Ohio.
 Morris Wuerpel, draftsman chief engineer's office, Terminal Railroad Association.
 Jno. H. Wyeth, jr., vice-president Wyeth Lumber Company, 413 Temple Building.

Class of 1890.

- A. G. Abbott, 2630 Chestnut street, clerk in commission house.
 Wm. H. Allen, Ph. B. (1894), teacher of mathematics manual-training school, Washington University.
 Clyde T. Bailey, with Fairbanks, Morse & Co., manufacturers, 4101 Finney avenue.
 Otto Fred. Bauer, student University of Illinois, Champaign, Ill.
 Ernest Wm. Bell, clerk with Laclede Gaslight Company, 2125½ Wash street.
 Wm. Alex. Blair, student St. Louis Law School, 3519 Lucas avenue.
 Geo. Innes Bonten, C. E. (1895), graduate student Washington University.
 Walter S. Brown, draftsman city waterworks.
 Wm. D. Christman, Florissant, Mo.
 Edmund P. Coles, in expert department Edison General Electric Company, Schenectady, N. Y.
 Horace B. Collins, Kirkwood, Mo.
 Jas. G. Creveling, engineer mines (1894), student Royal School of Mines, Clausthal, Germany.
 Geo. B. Dennison, law office 509 Chestnut street.

Robt. Ed. Einstein, draftsman, with Elliot Frog and Switch Company, East St. Louis, Ill.

Albert Herman Guela, bookkeeper, with H. H. Phillips, manufacturer of ice machinery.

Orlando H. Guether, with electric-light company in St. Louis, 1118 South Eighth street.

Wm. Ed. Harkness, draftsman Bell Telephone Company.

J. George Heid, practical chemist, 4506 Blair avenue.

Alb. Marvin Herget, teacher of drawing and tool work, Louisiana State College.

Williamson Pope Howard, jr., cashier and bookkeeper W. P. Howard & Co.

Nelson S. Hunsdon, in business San Antonio, Tex.

Geo. Wm. Ittner, clerk, with Anthony Ittner, brick manufacturer, Telephone Building.

Arthur B. Johnson, draftsman New York, Hartford and New Haven Railway (car department), New Haven, Conn.

Orville Edmund Kinne, bookkeeper C. Kinne & Co., Highland, Ill.

John Chesley Kinney, electrical worker Kinney & Graham, San Antonio, Tex.

Arnold Chas. Koenig, student Cornell University, New York.

Louis E. La Beaume, 5816 Cates avenue, with E. A. Manny, architect.

Fred Gordon Lindale, clerk Mississippi Glass Company, 3696 Finney avenue.

Jas. Hazzard Matthews, draftsman Southern Oil Company, Little Rock, Ark.

Charles Chester McGregory, teacher of manual training, high school, Springfield, Mass.

Joseph D. Mullen, draftsman Pullman Palace Car Company, Chicago.

Edw. Spencer Munson, stock clerk, with American Arithmometer Company.

Wm. Alex. Nicholson, jr., salesman, with Lammert Furniture Company.

John Christian Ransmeier, Ph. B. (1894, Northwestern University), clerk in mercantile establishment, Murphysboro, Ill.

Edw. Samuel Rea, bookkeeper Rea & Page Milling Company, Marshall, Mo.

James R. Sager, clerk, Lebanon, Ill.

Chas. Jos. Schnaus, street-railway electrician, St. Louis, 3009 Olive street.

Jno. A. W. Schoedel, draftsman, with Missouri Pacific Railway Company, 2112 Sidney street.

Prentiss Gale Scudder. Away at school.

Felipe Victor Seyffert, Chihuahua, Mexico.

William Maslin Seymour, erecting engineer Heine Safety Boiler Company.

Benj. F. Shields, real estate business, 103 North Ninth street.

Wm. Collier Vandergrift, teacher of manual training, Toledo, Ohio.

Robt. A. Wagner, journeyman pattermaker Union Iron and Foundry Company.

Ar. J. H. Wellenkamp, clerk, with H. Wellenkamp, general merchandise, Washington, Mo.

Jas. Alex. Worthington, clerk Excelsior Manufacturing Company.

Class of 1891.

Eugene H. Abadie, with Wagner Electric Manufacturing Company.

George Franklin Allen, with Hufnagel Boot and Shoe Factory.

Vernon Baker, senior engineering class Washington University.

Alva J. Barnett, superintendent Cuba Paint and Mining Company, Cuba, Mo.

Frank Leroy Bartlett, traveling salesman, with Tannert & Stribling Boot and Shoe Company.

Edward Bates, assistant, public library.

Bontie A. Becker, secretary and treasurer Donaldson Lumber Company, Donaldson, Ga.

Harry F. Bohn, student Drury College, Springfield, Mo.

Nat. C. Brady, clerk Dougherty-Crouch Drug Company.

August E. Brooker, clerk Chemical National Bank.

- W. A. Caldwell, student University of Michigan.
 J. Hayes Campbell, senior class Washington University.
 George E. Chamberlain, with Ripley & Bronson, Second and Morgan streets.
 Ludlum E. Chittenden, sales department N. K. Fairbanks & Co.
 True S. Clark, with Municipal Electric Light Company.
 Julien J. Crawshaw, employee of city water department, Chain of Rocks.
 Leo C. Dziatzko, senior engineering class Washington University.
 Charles D. Eaton, fire insurance (Presquier & Eaton).
 Walter Paul Eberlein, senior (chemistry) class Washington University.
 H. Nelson Emmons, student, Yale University.
 Ernest R. Gayler, senior engineering class, Washington University.
 Willis H. Grocott, senior engineering class, Washington University.
 James Harrison, student engineering, Harvard University.
 Nelson Joy Hawley, M. D. (1895).
 Benj. Alfred Hickman, entry clerk, Sligo Iron Company, 2527 Taylor avenue.
 Arthur Huhn, learning lithography, 219 Market street.
 John W. Jaquith, railway postal clerk, St. Louis and Malden Railroad, Pilot Knob. Mo.
 Harry B. Johnson, student, Oberlin College, Ohio.
 Samuel S. Judd, teacher of manual training, Missouri School for the Blind.
 Frank A. Kappelman, was draftsman American Brake Company. Died December 16, 1892.
 E. Raymond Kinsey, with R. E. McMath & Sons, civil engineer.
 Arthur N. Latham, with N. O. Nelson Manufacturing Company.
 Henry C. Leutert, draftsman with Terminal Railway Association.
 Edward H. Loffhagen, assistant, timber-testing laboratory, Washington University.
 Ben May, Virginia Military Academy.
 Ralph McCarthy, junior engineering class, Washington University.
 Robert C. Miller, student, Washington University.
 Paul Theodore Mucke, draftsman Pullman Palace Car Company.
 Abiel Royal Newcomb, draftsman in architect's office, 4737 Newcomb place.
 Albert S. Page, draftsman, with Kingsland & Douglas Manufacturing Company.
 George Y. Riddenbaugh, Los Angeles, Cal.
 Leroy K. Robbins, senior engineering class, Washington University.
 William E. Rolfe, senior engineering class, Washington University.
 R. C. Russo, Chinipas, Chihuahua, Mexico.
 Henry C. Schaefer, teacher shopwork and drawing, Manual Training High School, Louisville, Ky.
 John L. Schmidgall, mine surveyor, Murphysboro, Ill.
 Edward Philip Schoentgen, student, Massachusetts Institute of Technology.
 Eugene Schott, brewing business, Highland, Ill.
 Felipe R. Smith, chief clerk with railroad contractor, Pennsylvania Railroad, Elizabeth, N. J.
 Sumner E. Stearns, student, Cornell University.
 Edwin H. Steedman, student, Harvard University, Cambridge, Mass.
 Edward Suppiger, of Suppiger Brothers, boot and shoe store, Highland, Ill.
 Seneca C. Taylor, student, St. Louis Law School.
 Alfred H. Wehmiller, surveyor, with Merchant's Terminal Railway, 3803 Kosciusko street.
 Allan Pendleton Whittemore, junior engineering class, Washington University.
 Samuel S. Worthington, teacher, Forest Park University.

Class of 1892.

- Claiborne H. Adams, student, Princeton College, New Jersey.
 Cleason Ambler, with Ambler & Materne, wrought-iron pipe fitters, etc.
 Oliver J. Barwick, foreman and draftsman, Union Iron Works.

Louis A. Benecke, junior engineering class, Washington University.
 H. B. Bristol, junior engineering class, Washington University.
 Author Brown, practical carpenter, 1338 North Kings Highway.
 John D. Bryan, student, Washington University.
 Latour L. Chapman, 2812 Stoddard street.
 John H. Clarkson, jr., clerk, Burd, Stuyvesant Glue Company.
 Eugene C. Cowen, with Fisher & Co., real estate.
 Clay H. Creveling, M. D. (1895, Missouri Medical College).
 W. C. Daudt, with Kirchner & Kirchner, architects.
 Early Deane, Webster, Mo.
 Wm. B. Dean, jr., student, Sheffield Scientific School, Yale.
 Francis L. Donovan, real estate office, Seventh and Chestnut streets.
 Thomas Corwin Dutro, St. Louis Law School, junior class.
 Robert Etter, draftaman, with George R. Mauer, architect.
 Leslie C. Fitch, with Day Rubber Company, 415 North Fourth street.
 Charles Frick, student of pharmacy, Waterloo, Ill.
 Otto J. Fruth, student, medical school.
 Noel F. Gilbirds, storekeeper, Pullman Car Company, Washington, D. C.
 George B. Gilmore, foreman of red lead department, Southern White Lead Works.
 George W. Godlove, jr., student, Washington University.
 Aaron A. Hamill, draftsman, Rankin & Fritsch Foundry and Manhine Company.
 J. E. Hazeltine, student, Massachusetts Institute of Technology, Boston.
 Edward W. Harris, clerk, Drummond Tobacco Factory.
 Henry W. Herweck, draftsman, with Tudor Iron Works, East St. Louis.
 Wm. L. Hogle, of Elayer & Hogle, grocers, Salem, Mo.
 David H. Holmes, student, Washington University.
 Eugene Hutt, treasurer's clerk, Normal Institute, Tuskegee, Ala.
 Ernest A. Jacard, with Union Trust Company.
 Loomis C. Johnson, law student, University of Missouri, Columbia.
 Bertrand Johnson, student electrical engineering, Drexel Institute, Philadelphia.
 Ernst C. Kieckers, draftsman, with Heine Safety Boiler Company.
 Otto Kuehl, with Tudor Iron Works, East St. Louis.
 Charles N. McFarland, instructor machine tool-work, St. Louis Manual Training School.
 Charles S. McEwen, draftsman, with C. K. Kamsey, architect, 3829 North Twentieth street.
 Edward C. Meissner, draftsman, with Terminal Railway Company.
 Edwin P. Moritz, draftsman, St. Louis Iron and Machine Company.
 George T. Murphy, student, St. Louis Law School.
 Burton E. Newcomb, with Mansur & Tebbetts Implement Company.
 Truman M. Post, junior engineering class, Washington University.
 Harry Prufrock, with Wm. Prufrock & Co., manufacturers of furniture.
 Harry Rice, was student, Massachusetts Institute of Technology, Boston. Died December 28, 1894.
 John Rohlfing, draftsman, Wagner Electric Manufacturing Company, 2017 Locust street.
 Timothy M. Schierbaum, draftsman, Wagner Electric Manufacturing Company.
 John R. Shultz, salesman, Shultz Belting Company.
 Frank H. Super, student, Ohio University, Athens, Ohio.
 Herman A. Steinwender, jr., student, St. Louis Law School.
 Edwards Stephens, student, Smith Academy.
 Fred. P. Stevens, student, Cornell University, New York.
 Albert H. Thiele, machinist, with Yerkes & Finan Machine Company, Ninth and Dock streets.
 Augustus O. Thornton, draftsman, room 118, Laclede Building.

Frank Fred. Thul, was draftsman with Koken Architectural Iron Works. Died 1894.
 Edward M. Tighe, with Meyer Brothers Drug Company, Dallas, Texas.
 Wilbur T. Trueblood, draftsman, architect's office, 3021 Magazine street.
 Howell Van Blarcom, teacher of forging and woodwork, University of Missouri, Columbia.
 R. H. Weatherly, with Searritt Furniture Company, as draftsman, 3860 Windsor place.
 Russell White, cadet, United States Naval Academy, Annapolis, Md.
 Charles Hunt Wilson, junior engineering class, Washington University.

Class of 1893.

Leo Ammann, student, Cornell University.
 John Oscar Bardill, with J. Bardill & Co., manufacturers, Grantfork, Ill.
 Walter E. Bernays, sophomore, Washington University.
 Alvin August Boss, chief clerk at post-office, Jackson, Mo.
 Dudley A. Bragdon, sophomore, Washington University.
 Louis Schuyler Brainerd, with Wagner Electric Company.
 William R. Bright, student, University of Virginia.
 Alan C. Caldwell, with Hamilton-Brown Shoe Company.
 James Robert Cardwell, assistant chief clerk transportation department American Cotton Oil Company, Chicago.
 Edwin Rutherford Chappell, with St. Louis Trust Company.
 William Glasgow Clark, student Washington University.
 Warren E. Cummings, with Bell Telephone Company.
 Carl Julius Daudt, student, St. Louis Law School.
 Arthur S. Delano, Murphysboro, Ill.
 Henry Taylor Dill, preparatory school, Cornell University.
 George Dunford, traveling salesman.
 Henry B. Eggers, with Eggers Flour Milling Company.
 Walker Evans, jr., with Mound City Paint and Color Company.
 Louis E. Fischer, with Pitzman Company, surveyors and engineers.
 Guy K. Fisher, sophomore, Washington University.
 William A. Freudentein, student, Washington University.
 James T. Fuller, president and general manager Fuller Engineering Company, Calvert, Tex.
 Charles H. Gleason, jr., real estate business.
 Mahlon James Hale, clerk, Simmons Hardware Company.
 William A. Hammel, secretary Hammel Harness Company, 1129 Pine street.
 William T. Hapeman, law department, Lake Forest University, Illinois.
 Roy Mitchell Hardy, student in A. B. course, Michigan University, Ann Arbor, Mich.
 George Albert Harker, clerk, Simmons Hardware Company.
 Jesse Harnage, law student, Columbia, Mo.
 Thomas G. Hawley.
 Bodley Hough, sophomore, Washington University.
 Arthur Irwin Jacobs, sophomore, Washington University.
 E. F. Berkley Jones, with Crystal Water Company.
 Robert A. Kissack, student, St. Louis Art School.
 Chas. S. Knapp, student, Washington University.
 Douglas A. Lee, clerk, with St. Louis and San Francisco Railway Company.
 Charles R. McAlister, clerk, with Anchor Flour and Feed Company.
 Geo. A. McKinney, McKinney & Sons, real estate and insurance agents, Alton, Ill.
 Henry C. Meinholtz, with N. O. Nelson Manufacturing Company.
 Stanley Holmes Moore, draftsman, with Ranken & Fritsch Iron Company.
 William D. Moore, clerk, shipping department Simmons Hardware Company.
 Joseph A. Osborn, electrician, 2353 Scott avenue.
 Walter Keene Parker, with Texas Implement and Machine Company, Dallas, Tex.

Robert Patterson, jr., with the National Cash Register Company, Dayton, Ohio.
 Edward Milton Primeau, sophomore, Washington University.
 David Sharpe Ralston, 2827 Washington avenue, with Beck & Corbett Iron Company.
 Edward James Ravold, draftsman, Kupperle Manufacturing Company.
 James Walker Rayburn, real estate business.
 John Reymershoffer, jr., assistant, drug store, care E. Bramer, Monterey, Mex.
 Wm. H. Roever, sophomore, Washington University.
 Sydney J. Ross, 3019 Chestnut street, clerk, with Monand City Distilling Company.
 Robert E. Rust, student at Cornell University.
 Frank W. Schaberg, clerk, State Bank of St. Louis.
 Louis Adolph Schlossstein, student, Washington University (school of engineering).
 Jonathan Wm. Seargeant, sojourning in Phoenix, Ariz.
 S. Newman Sherzer, clerk, Southwestern Railway Company, 3138 Sheridan avenue.
 Sidney G. Smith, with Marshall Livery Company, 2829 Morgan street.
 Wm. Hargadine Thomson, student, Washington University (School of Engineering).
 Charles Frederic Transeau,
 Samuel Glover Way, with Meysenberg Electric Company, Chicago, Ill.
 George Von Weise, salesman with Weise & Bradford, Greenville, Ill.
 Meyer Wiener, student, Missouri Medical School.
 Arthur B. Woodward, clerk with Woodward Printing Company.
 Arthur Thos. Worthington, clerk with B. Nugent & Bro.

Class of 1894.

James Adkins, jr., student, Washington University (School of Engineering).
 Wilfrid A. Alexander, draftsman, with Fowler & Fowler, attorneys.
 Geo. K. Anel, student, Washington University (School of Engineering).
 Aleck T. Averill, 5740 Cabanne place, with Mills & Averill, merchant tailors.
 Charles P. Baxter, Taylorville, Ill., cashier, Pratt-Baxter Grocery Company.
 John H. Bigger, 2938 Morgan street, provision business.
 Chas. Macon Biggers, artist for the Republic.
 Lynton T. Block, with N. O. Nelson Manufacturing Company.
 George Edwin Bradley, 3934 Washington avenue, clerk with Bradley & Quinetta, real estate.
 George Bertrand Brandon, 4036 Cook avenue.
 Edgar W. Brown, 1333 North King's Highway, with Van Nort Bros., electricians.
 Charles Blatchford Collins, 3734 Olive street, clerk Graham Paper Company.
 John Mortland Cowan, 3017 Eads avenue, clerk, Hydraulic Press Brick Company.
 Fred G. Craig, 1214 North Market street, draftsman, American Brake Company.
 Philip Ewald Damon, student, Agricultural College, Ames, Iowa.
 Aubrey Eddie, machinist, Kirkwood, Mo., with Missouri Pacific Railway, Ewing and Compton avenues.
 Wm. Charles Esamueller, with Esamueller & Barry.
 Henry Earl Ewing, Kirkwood, Mo., electric railway electrician, St. L. and Suburban.
 Oscar Herman Fischer, 4161 Easton avenue, student, School of Pharmacy.
 Maurice A. Frankenthal, student, Washington University.
 Walter G. Franz, 6730 Mitchell avenue, electrical department Terminal Railroad Association.
 Edward Gottlieb, student, 4463 Page avenue.
 William Henry Gruen, student, Washington University (School of Engineering).
 Emil Haas, 3426 Laclede avenue, stock clerk, I. Harris & Co.
 William Frederick Hardy, 2929 Barrett street, with Hopkins Weller Drug Company.
 Oliver J. Heeley, Belleville, Ill., student, St. Louis Medical College.
 Louis August Hoerr, draftsman, Brownell Car Company.
 Warren Wayne Ittner, 2326 Park avenue, superintendent brickyard in Belleville.
 Louis Moore Jefferis, with City Water Company, East St. Louis, Ill.

Asa A. Johnson, Leavenworth, Kans.

Edgar Joseph Kahn, Peoria, Ill.

Edward A. Kuhn, student, Washington University (School of Engineering).

Charles W. Lewis, 1724 Wash street, clerk, with Graham Paper Company.

James A. Lewis, 4304 McPherson avenue, clerk, with Drummond Tobacco Company.

James Crawford McQuilkin, student, Washington University (School of Engineering).

Otto W. Meissner, with Terminal Railway and Union Depot Company.

Henry H. Niemeyer, reporter, 5595 Bartmer avenue.

John Watson O'Brien, shipping clerk, Missouri Car and Foundry Company.

Fred. George Oeters, 2623 Eads avenue, designer with Woodward, Tiernan & Co.

Paul Gifford Palmer, 1532 Mississippi avenue, advertising solicitor.

Frank A. Rapp, student, Washington University (School of Engineering).

Edwin L. Ray, 3400 Caroline street.

Frank LeRoy Reardon, 2333 Lucas avenue, student, Washington University (School of Engineering).

Charles G. Reymershoffer, office clerk with Silveira, Tellez & Co., Habana, Cuba.

Eugene A. Scharff, student, Washington University.

Ernst Schraubstadter, 920 Morrison avenue, student.

Semple Stillman Scott, secretary Scott Electric Company, 811 Locust street.

Arthur Sidebotham, Wellston, Mo., clerk, St. Louis and Southwestern Railway Company.

Rufus Montrose Stokes, 2724 Hickory street.

Harry Vissering, machinist improver, Missouri Pacific Shops, Kirkwood, Mo.

Eugene Chas. Henry Zeller, student, Washington University (School of Engineering).

SUMMARY OF OCCUPATIONS.

Graduates of St. Louis Manual Training School.

Architects	12
Artists	3
Bankers or brokers	5
Bookkeepers	10
Carpenter	1
Clerk (cashier or stenographer)	1
Clerks (hardware or manufacturing)	35
Clerks (railroad or general offices)	28
Clerks (mercantile)	31
Commercial travelers	8
Contractors	5
Dentists	2
Draftsmen (for architects)	11
Draftsmen (for manufactures or railroads)	42
Electricians	18
Engineers, civil (with degrees)	11
Engineers, mechanical (with degrees)	16
Engineers, electrical (with degrees)	2
Engineers, mining (with degrees)	9
Engineers, assisting (without degrees)	27
Engineer, steam	1
Farmers or fruiterers	8
Foremen (in factories)	4
Foremen (in drafting or designing rooms)	4
Insurance	4
Librarians	2
Lawyers	8

Managers or superintendents of industrial establishments	23
Manufacturers	23
Merchants	21
Machinists	8
Mechanic (of other sorts)	1
Master mechanic of railroad	1
Physicians	12
Real estate or loan business	14
Students (the past year)	91
Teachers	30
Unknown or unemployed	29
Deceased	14
Counted twice	14

Out of the whole number a little more than one-third have entered upon more or less higher education, general or professional.

The alumni are fully organized and an annual banquet is held in the month of June. They are a very enthusiastic body of young men.

For the sake of fuller information on the subject of the careers of manual graduates, the writer has procured data from the Baltimore Manual Training School as follows:

OCCUPATION OF GRADUATES.¹*Baltimore Manual Training School.*

Architect	1
Bankers	2
Bookkeeper	1
Clerks (records, etc)	2
Clerks (railroad)	3
Clerks (mercantile)	5
Commercial travelers	2
Draftsmen (in railroad or industrial establishments)	17
Dentist	1
Electricians	8
Civil engineers	7
Mechanical engineers	4
Electrical engineers	8
Marine engineer	1
Foreman (manufactory)	1
Superintendents of industrial works	5
Manufacturers	4
Merchants	7
Machinists	24
Mechanics of other kinds	8
Minister (clergyman)	1
Real estate	1
Students	30
Teachers	8
Unknown	9
Deceased	2
Total	162

¹ Furnished by Supt. Henry A. Wise.

CHAPTER VI.

UNIVERSITY EXTENSION.¹

The university extension movement has spread very rapidly. It was first introduced into this country in its present form in 1890 by the Philadelphia Society for the Extension of University Teaching. Now the movement extends from Maine to California and from Minnesota to Texas. It has met with varying success in different communities. The Northwestern University, at Evanstown, Ill., reports that after trying the work for three years it has finally been abandoned. In Wyoming the State University has offered courses of lectures, but during the year 1893-94 there was no call for them. The same is true in other parts of the country. The institutions seem to be more ready to provide courses of lectures than the people are to take advantage of them. In some parts of the country the large towns are not plentiful, and the expenses of a lecturer on a circuit where the centers are so far apart are too great.

In other parts of the country the extension movement is growing very rapidly. Some of the agencies that are doing the most work in this line are the American Society for the Extension of University Teaching, University of Chicago, University of Wisconsin, University of the State of New York, Rutgers College, and University of Kansas. The courses offered and delivered, together with reports of the work in various sections so far as reported to this Bureau, are given in the following pages:

University of California, Berkeley, Cal.—With a view to the extension of the advantages of the university to teachers and other persons whose engagements will not permit residence at the university, courses of instruction are offered from time to time in San Francisco and in other places. Persons who offer to do systematic work in the extension courses, and to take examinations in them, are enrolled as attendants upon extension courses. Attendants who pass satisfactory examinations are entitled to receive, from the university, certificates of record of the work done, which may be accredited to them, upon their scholarship records, if they subsequently become students of the university. Visitors may be admitted to extension courses at the discretion of the professors in charge. During the year 1893-94 the following courses were given: In San Francisco: The logic of mathematics: Geometry, 9 lectures; algebra, 9 lectures; introduction to political economy, 9 lectures; poets and dramatists of the eighteenth century, 9 lectures; the Epistles of Horace: Translation and exegesis, 9 exercises; poets of the nineteenth century, 9 lectures. In Los Angeles: The development of English comedy, 6 lectures. In Sacramento: Economics of industry, 9 lectures; the development of English comedy, 6 lectures. In San José: Napoleon and his epoch, 6 lectures. In Ventura: Causes of the present social unrest, 3 lectures.

Leland Stanford Junior University, Stanford University, Cal.—The organization of university extension societies is not undertaken by the university, but its professors are, in general, prepared to respond to any demand for courses of lectures not conflicting with university duties. They are also willing, whenever occasion arises, to undertake work in teachers' institutes, and to take part in lecture courses in neighboring towns. In addition to a large number of single lectures delivered in the

¹ See also Annual Reports for 1889-90, pp. 207, 247, 827-835, 1159-1161; 1890-91, pp. 843-852; 1891-92, pp. 743, 751, 983, 1206; 1892-93, pp. 1613-1617.

various cities and towns of the State, the following more extended courses of work were presented during the year 1893-94: Evolution, 6 lectures, in San Francisco; 3 lectures, in Los Angeles; 2 lectures, in San José; modern poetry and modern thought, 7 lectures, in Oakland; literature and life, 3 lectures, in San Francisco; evolution in relation to religion and society, 3 lectures, in Santa Clara; studies on children, 4 lectures and 4 conferences, in Santa Rosa; psychology of childhood, 5 lectures and 5 conferences in Oakland; 3 lectures and 3 conferences in Stockton; masterpieces of Greek sculpture, 8 lectures, in San José; ethics and literature in the public schools, 5 lectures, in Napa and in Red Bluff; 3 lectures in Yuba City; the labor problem, 8 lectures, in Oakland; 8 lectures in San José.

University of Colorado, Boulder, Colo.—As they may be able to find the time, the members of the faculty are prepared to do university extension work in different parts of the State.

University of Denver, University Park, Colo.—The university is prepared to furnish the following courses of 6 lectures each: Studies in the French Revolution; studies in Christian evidences; ethics; astronomy; mathematics; Greek life and thought; English literature; political economy; sociology; botany; and geology.

University of Chicago, Chicago, Ill.—The university extension division offers instruction according to three different methods: (1) by lecture studies with the usual features of syllabus, review, weekly exercise, and examination; (2) by class instruction in classes organized outside of the university, but within the limits of the city of Chicago, and meeting on evenings and Saturdays; (3) by correspondence.

The following is a list of the courses of instruction at present offered in the university extension division by the first of these methods. This list will necessarily be modified as the demand for new courses arises. (1) Philosophy: Movements of Thought in the Nineteenth Century. (2) Political Economy: The Modern Church and the Labor Question; Recent Developments of Social and Industrial Democracy; Socialism; Social Experiments. (3) Political Science: American Politics: (I) The Period of Dominant Foreign Influence, (II) The Period of Dominant Internal Development; Historical Geography; The Geography of Europe; The Great Commercial Cities of Antiquity. (4) History: An Introduction to the Study of History; The Ethnic Foundation of Modern Civilization; Political Foundation of Modern Civilization; Baron and King—the Evolution of a Typical European Monarchy; The History of Political Parties in the United States; Representative American Statesmen; The History of the Middle Ages; Mohammed, Mohammedanism, and the Crusades; The Political Development of the European Nations since 1792; The Founding of the German Empire of To-day; Studies in the History of Europe from the French Revolution to the Present Time; Character Studies in Nineteenth Century History; Social Life in the American Colonies; American Statesmen and great Historic Movements; *Neueste Geschichte von Afrika*; *Gegenwärtige Zustände im Orient*; Herodot—der erste Geschichtsschreiber des Altertums; Roman, Barbarian, and Christian; How we are Governed; The Making of a Federal Republic; Six American Statesmen; The American Revolution; Monks and Monasteries. (5) Sociology and Anthropology: First Steps in Sociology; *Die Grundzüge der Sociologie*; Questions of Labor and Social Reform; Questions of Monopoly and Taxation; Some Social and Industrial Forces in American History; Charities and Corrections; The Family—a Sociological Study; Some First Steps in Human Progress; The Native Races of North America; Early Man in Europe; Evolution; A Century of Social Reform; English Fiction and Social Reform; First Aid to the Injured; Some Leaders in Sociology; Utopias; Social Aspects of the Labor Movement; Some Social Experiments. (6) Comparative Religion: Shinto, the Ethnic Faith of Japan; The Science of Religion. (7) The Semitic Languages and Literatures: The History and Institutions of Islam. (8) The Greek and Latin Languages and Literatures: Six Readings from Horace; Homer, the Iliad; Studies in the Greek Drama; Preparatory Latin Teaching; The Decline and Fall of Greece; Virgil. (9) Romance, Literature and Philology: French Literature; *Littérature Française*. (10) The English Language and Lit-

erature: Studies in Biblical Literature; The Tragedies of Shakespeare; Ancient Tragedy for English Audiences; Stories as a Mode of Thinking; Spenser's Legend of Temperance; Literary Criticism and Theory of Interpretation; Shakespeare's "Tempest" with Companion Studies; Preliminary Course in English Literature; Some Studies in American Literature; Introduction to the Study of Literature; English Romantic Poets from 1780 to 1830; Literature of the Age of Elizabeth; George Meredith; Studies in English Poetry; Poetry as a Fine Art; The Creation of the English Novel; The Decay of Romanticism in English Poetry; Studies in Style; American Prose Writers; American Poets; History and Structure of English Speech; Old English Life and Literature; Modern English Poetry; General Survey of American Literature; Masterpieces of English Poetry; Prophets of Modern Literature; Masterpieces of George Eliot; Social Studies in Henrik Ibsen. (11) Biblical Literature in English: Old Testament Thought Concerning Suffering, Scepticism, and Love; The Second Group of Paul's Letters; Religion in the Talmud; The Jewish Sects; Biblical Literature; History of Judaism; What the Monuments tell us relative to the Old Testament; The Forgotten Empires and the Old Testament; The Apostolic Church; The Life and Work of Paul; Hebrew Poetry; Hebrew Prophecy studied in the Light of the Prophets of the Assyrian Period; Messianic Prophecy; The Messianic Predictions of the Hebrew Prophets; The Five Megilloth (Rolls); Some Aspects of the Life of Christ; Sources and Relations of the Four Gospels; Jewish and Christian Writings parallel with, but excluded from Our Bible. (12) General Astronomy. (13) Physics: Sound; Hydrostatics and Pneumatics; Elements of Electricity and Magnetism. (14) Chemistry: General Chemistry; Chemistry of Everyday Life. (15) Geology: Landscape Geology; The Evolution of the North American Continent. (16) Zoölogy: Biology; General Course in Bacteriology. (17) Other Courses: The Microscope and its Uses; Music; Painting and Sculpture; Ancient Sculpture; Contemporary French Art; Contemporaneous Art; History of Art; Norwegian Literature; Swedish and Danish Literatures; Social Studies in Björnson and Ibsen; Studies in Russian Literature; Japan and the Japanese; Japanese History and Civilization.

Knox College, Galesburg, Ill.—The following courses of 6 lectures each are offered: General course in sociology; English literature (3 courses); astronomy; electricity; economics; modern history; Roman literature (2 courses); Greek literature; philology; natural sciences (2 courses); English history; history of the Middle Ages; history of art; American literature (2 courses); singing (3 lectures).

Lake Forest University, Lake Forest, Ill.—A course of 12 lectures on botany was delivered at Indianapolis, Ind.

Monmouth College, Monmouth, Ill.—Two courses of 6 lectures each on physiology and chemistry were given in the college chapel.

Indiana University, Bloomington, Ind.—Extension courses were delivered during 1893-94 as follows: Economics: At New Albany, Ind., 6 lectures, attendance, 150; at Anderson, Ind., 3 lectures, attendance, 35; at Frankfort, Ind., 5 lectures, attendance, 60. History: At New Albany, Ind., 6 lectures, attendance, from 50 to 75; at Delphi, Ind., 6 lectures.

Earlham College, Richmond, Ind.—The following extension courses were delivered: At Richmond, Ind., a course of 10 lectures on American Colonial History, with attendance of 65, and a course of 10 lectures on Biology, with an attendance of 80; at Rockville, Ind., a course of 6 lectures on Some Epochs of English History, with an attendance of 125.

The State University of Iowa, Iowa City, Iowa, offers the following courses: A course of lectures on public education; 4 lectures on Latin literature, with readings; 4 lectures on antiquities; 4 lectures on geology; 3 on the geological succession of animal life; 2 on the origin of popular government in America; 4 on botany; 3 on types of vegetable life; 3 single illustrated lectures on botany; 4 lectures on magnetism and electricity; 1 on the protection of buildings from lightning; 2 on primary and secondary batteries; 2 on the rules of deliberative bodies; 4 on astronomical

subjects; 4 on zoology; 3 on special groups of animals; 6 on modern political economy; 6 on the genesis of the state and primary state forms; 3 single lectures on political and social science; 4 lectures on history of education; 2 on education; 6 on American authors; 6 on our nation; 6 on American history; 2 on Greek tragedy and Greek theater; 3 on land surveying; 3 on meteorology; 1 on Nicaragua; 1 on the Reformation; 1 on liberty among the Slavs; 2 on the Goths; 2 on Paris and London; 1 on the faith of our fathers; 3 on animal morphology and physiology; 6 on modern social problems and their historical relations; a course on use of cements, sewerage systems, roads and bridges; 1 lecture on Alaska; a course on four great writers of German literature; 1 lecture on the Tower of London; 1 on Charles the First, a martyr; 1 or 2 lectures on alchemy; 1 or 2 lectures on the discovery of truth as a fine art; 1 on chemistry in its relation to sanitary science, and 1 on the sciences as applied to the detection of crime.

University of Kansas, Lawrence, Kans.—The following 31 courses of 12 lectures each are offered: Studies in Shakespeare; English literature of the nineteenth century; political economy; money and monetary theories; taxation and public finances; chemistry of everyday life; electricity and its modern applications; heat, light, sound, and their practical applications; German literature; astronomy; geology; paleontology; romantic school in France; development of the novel in France; surveying; municipal and domestic sanitation; Greek art; classical Greek literature for English readers; Greek architecture and sculpture; Roman poetry; art of pianoforte playing; medical chemistry and sanitary science; modern philosophy; psychology; American history; municipal government; roads, streets, and pavements; history and philosophy of American literature; the German Empire; botany; evolution. The courses given in 1893-94 were as follows:

Location of center.	Subject of course.	Number of lectures in course.	Average attendance at lectures.	Average attendance at class.	Average number of weekly papers.	Passed examination.
Atchison	Studies in Shakespeare	6	125	12		4
Iola	American literature	12	60	40		16
Kansas City, Mo	Evolution	12	1,000	75		
Do	American literature	12	200	20		7
Do	Electricity applied	12	300	50		
Kansas City, Kans	English literature of the nineteenth century	12	300	76		13
Do	Political economy	12	250	40		5
Do	Studies in Shakespeare	12	90	20		6
Lawrence	English literature of the nineteenth century	12	125	40		
Do	Political economy	12	100	14		7
Do	Electricity applied	12	300	59		8
Leavenworth	do	12	200	40		5
Do	Studies in Shakespeare	12	175	80		
Do	Psychology	12	125	25		

Tulane University, New Orleans, La.—The following list will serve to indicate the Tulane University lectures during the past session: English history as illustrated by Shakespeare's plays, a course of 7 lectures given in the Hall of Newcomb College, by Rev. Beverley Warner: (I) King John; (II) Richard the Second, The Lancastrian Usurpation; (III) Henry the Fourth; (IV) Henry the Fifth; (V) Henry the Sixth; (VI) Richard the Third; (VII) Henry the Eighth. Seven lectures by Col. W. H. Hallett: (I) The Story of Macbeth; (II) Julius Cæsar; (III) Pathos and Humor in Shakespeare; (IV) Othello and Iago; (V) Heroes and Heroines in Shakespeare; (VI) The Stories of Tennyson; (VII) Merchant of Venice. Mr. William Beer, librarian of the Howard Memorial Library, delivered a course of 6 lectures

on bibliography: (I) The Alphabet; (II) The Art of Printing; (III) The Book; (IV, V, and VI) The Science of Bibliography applied to the study of Literature, Art, and Science.

Bowdoin College, Brunswick, Me., offers courses of 6 lectures each on Homer, Roman literature, biology, chemistry, and American National Government. Only 1 course was given during 1893-94 at Augusta, Me., on biology, with an attendance of 75.

Colby University, Waterville, Me., offers the following courses: Aryan and Semitic Languages, 5 lectures; History of Italian Painting, 5 to 10 lectures; Greek Tragedy and the Greek Theater, 3 lectures; Glaciers and Glacial Deposits, 6 lectures; Mineralogy, 3 lectures; American History, 5 lectures; History, Functions, and Problems of Money, 3 lectures; Biblical Literature, 5 lectures; Classical Periods of German Literature, 5 lectures; Seven Great Styles of Architecture, 5 lectures; Architecture and Sculpture, 5 lectures; The Sun, Moon, and Planets, 3 lectures; also a number of single lectures. In 1893-94 there were delivered courses of 5 lectures on Architecture and Sculpture at Portland, with an attendance of 75; on French Revolution at Calais, with an attendance of 75, and at Skowhegan with an attendance of 100; also 18 single lectures on various subjects.

University of Minnesota, Minneapolis, Minn.—The following courses of six lectures each are offered: Literature and language: Scandinavian Mythology and Archaeology; The Norseman in Foreign Lands; Representative Scandinavian Men of Letters; Old Greek Life; Private Life of the Romans; Studies in Shakespeare; The American Essay; As You Like It, with general introduction to the Shakespearian comedies; King Lear, with general introduction to the Shakespearian tragedies; Glimpses of English Life and Letters of To-day; Messages for Democracy from Modern Literature; The Roman Poets of the Augustan Age; American Authors. Biological science: Comparative Embryology of Animals; Comparative Histology of Animals; General Physiology of Plants; Relations to the air, soil, water, temperature, light, electricity, and bacteria; Power of Movement in Plants: special senses in plants; The Biology of Bacteria; Outlines of Philosophic Botany; Facts and Theories in General Zoology and Embryology; The Vertebrata, or "Backboned Animals;" Psycho-Physics; Comparative Studies in Animal Biology; Preventive Medicine; or, Personal Hygiene. Physical and mathematical science: A course in practical assaying—the process described and the furnace work illustrated; Studies of the Weather; Astronomy: Our Sun and Other Suns; Astronomy; Electricity; An Introduction to Modern Chemical Theory, with illustrations of chemical change and the general chemical laws—special attention will be paid to the chemistry of water and air, with tests for the impurities in water; Physical Geography; The Building of Minnesota: An outline of the geological forces whose operations have resulted in the development of the present physical conditions of the state; Light; Magnetism and Voltaic Electricity; Spectrum Analysis, Double Refraction and Polarization of Light; Modern Views of Magnetism (half-course, three lectures); Modern Uses of Electricity in the Home, Office, and Factory; Applied Electricity: An illustrated and experimental course especially designed for carmen, engineers, and others handling electrical apparatus. History: History of England (twelve lectures); Political History of the United States, 1783-1829; Political History of the United States, 1829-1889; Europe in the Nineteenth Century; Modern Economic and Social History; United States History; Civics; European History; Development of Representative Government in England—an outline of English constitutional history to 1688; Constitutional Developments of the American Colonial Period—an outline of American politics to the Revolution; American Politics (selected topics) in the Nineteenth Century; Western Europe in the Nineteenth Century—the democratic movements in politics and in industry; Eastern Europe and "Greater Europe" in the Nineteenth Century. Economics and political science: State and Municipal Ownership; United States Money; Principles of Taxation; Science of Legislation; Wages Question; Civil Service Reform; Socialism; The

History and Causes of Financial Crises. Philosophy: The Principles of Psychology—an outline of the fundamental phases of mental life; The Relation of Psychology to Contemporary Thought—in its philosophic, scientific, and religious aspect; A Comparison of Greek and Christian Ethics; Modern Ethical Theories; Representative Modern Philosophers. Pedagogy: Educational Principles; Physiological and Experimental Psychology—reflex action, sleep, dreams, hypnotism, etc.; Introspective and Experimental Psychology—the practical and educational phases of attention, perception, imagination, memory, and will; Child Psychology—a half-course of three lectures; The Study of Child Life; The Evolution of our Present Curriculum and Methods of Teaching in the Public Schools.

There were given during the year 12 courses—5 in history, 4 in English literature, 1 in American literature, and 2 in astronomy. They were given at eight different centers and the average attendance was about 100.

William Jewell College, Liberty, Mo., offers the following courses: Representative English Poets, 6 lectures; Poets of America, 6 lectures; Social and Economic Problems, 12 lectures; Principles of Taxation, 6 lectures; Money and Banking, 6 lectures; Natural Monopolies, 6 lectures; Events and Epochs in Ancient History, 12 lectures; Ancient Empires of the East, 6 lectures; Epochs in the History of Greece and Rome, 6 lectures; Epochs in American History, 6 lectures; The English Language, 6 lectures; The History and Science of Education, 6 lectures; Music (adapted to secular societies and teachers' clubs), 6 lectures; Music (adapted to church clubs), 6 lectures; and Psychology, 10 lectures.

One course of 5 lectures on money was delivered at St. Joseph, Mo., with an attendance of 135.

Rutgers College, New Brunswick, N. J.—The following account of university extension work in New Jersey was furnished by Dr. Austin Scott, president of Rutgers College:

"In the autumn of 1891 the trustees of Rutgers College established a special department for the prosecution of university extension teaching. It was thought appropriate that the New Jersey State College for the Benefit of Agriculture and the Mechanic Arts should carry forward the purposes of its foundation by means promising a peculiar opportunity for usefulness.

"As a field for such work New Jersey seemed to promise the best results. The State is compact, and it is covered with a railroad network whose meshes are so fine that no point in the State is 10 miles from a railroad.

"There has been no attempt to make a definite coordination of the extension work with the college curriculum. It may be said, however, that our extension course of 12 lectures with the accompanying class work, the preparation of papers, and the final examination is a full average equivalent of the work done in college during a thirteen weeks' term of the junior year, in the same subject with recitations three hours a week.

"During the winter of 1891-92 courses were given in four different counties at the following centers: New Brunswick, Freehold, Somerville, East Millstone, and Paterson. The subjects chosen were all of them such as are within the particular sphere of the State agricultural colleges, namely: Agriculture, astronomy, botany, chemistry, and electricity. It was especially gratifying that during this first experimental year the subject of agriculture should have been chosen for scientific study in Freehold, the center of a prosperous farming region. And the fact that over 100 farmers attended this course proved that it was quite desirable to make the attempt to apply the methods of university extension particularly to agricultural teaching.

"These courses consisted each of 12 lecture-studies, and all the recognized features of the extension courses were insisted upon, including class-hour, written exercises, etc.

"The attendance at the lectures varied from 30 at the course that was least attended to 215, the largest audience of that year. The total maximum attendance at these

7 courses was 686. For the class hour more than 50 per cent on the average remained. And of these about 20 per cent submitted to the final examinations, to whom 62 certificates were granted (19 'honor' certificates, 43 ordinary certificates).

"The experience of this year showed that it would be wise to offer not only courses of 12 lectures each, but shorter courses as well. And in order to be able to do this without impairing the quality of the work it was determined to give courses of 6 lectures, but to designate these as half-courses, and to grant upon their completion not a certificate, but only a pass card, which could be exchanged for a certificate upon the completion of a second half-course in the same or an allied subject. This was particularly necessary among farmers, who could with difficulty be held together for so long a course as one extending over twelve weeks. The distances from which they had to come made attendance in the winter a matter of some difficulty, and the regularity became far greater when for them the shorter course was adopted.

"During the year 1892-93 nine courses were given, following the same lines as those laid down the first year, excepting that a course in architecture was given in the city of Newark. These courses were given in six different counties, at the following places: Jersey City, Moorestown, Keyport, South Orange, Paterson, Kearney, Newark, and New Brunswick; and in the following subjects: Agriculture, architecture, astronomy, botany, chemistry, and electricity.

"The attendance showed a marked increase; the largest attendance in any course reaching 256, and the lowest being 36. The total maximum attendance at all the courses was 1,311. More than 50 per cent remained for class hours, but the numbers taking the examination showed a slight decrease. Fifty-one certificates were issued.

"During this year two courses were given in agriculture and the promise in this field seems so great that it was determined to make it a separate division of the university extension work, and in its interest to set a lower price than for the other courses. For the courses in agriculture, therefore, it was determined to charge a fixed rate of \$10 a lecture.

"The work of the third year was accordingly separated into two parts: First, the general work, which included courses in electricity, English literature, art, astronomy, chemistry, history, and one course on the use of iron and steel in civil engineering. The courses were given in New Brunswick, Newark, and South Orange, and the attendance ranged from 293 to 18. In recognition of successful examination passed upon this work 27 certificates and 14 pass cards were granted.

"The second division of the work of 1893-94 was the instruction in branches of agricultural science. The audiences at these courses consisted almost exclusively of farmers, and ranged from 114 to 27. Centers of work were established in five different counties, in the following widely separated places: Moorestown, Mullica Hill, Red Bank, Freehold, Newton, and Haddonfield.

"Our work has been undertaken on a little different plan from that of the other early attempts to introduce university extension in this country. First, it has been taken up as a part of the duty owing to the State by the State agricultural college.

"Secondly, the especial applicability of the method of university extension to agricultural instruction constitutes a very valuable feature, as we think, of our work.

"Thirdly, we do not recognize in work for a certificate a lower unit than the long course of twelve lectures; and our six-lecture half-courses are constructed with the idea of a subsequent course of six lectures completing the same subject.

"As a matter that may be of interest, there is appended a tabular statement of the various courses thus far given, with attendance, etc."

1891-92.

Subject.	Center.	Attendance.				Certificates issued.	
		Lecture.		Class.		Honor.	Ordinary.
		Aver- age.	Maxi- mum.	Aver- age.	Maxi- mum.		
Astronomy	New Brunswick	45	78	17	24	2	6
Agriculture	Freehold	61	105	55	90		
Electricity	Somerville	80	166	60	75	2	8
Chemistry	East Millstone	85	165	60	75	2	8
Do	New Brunswick	80	39	16	24	8	5
Do	Paterson	185	215	65	65	5	9
Botany	New Brunswick	37	44	33	39		7
Total		523	686	296	422	19	48

1892-93.

Subject.	Center.	Num- ber of lec- tures.	Attendance.				Certificates issued.	
			Lecture.		Class hours.		Honor.	Ordinary.
			Aver- age.	Maxi- mum.	Aver- age.	Maxi- mum.		
Astronomy	Jersey City	6	107	165	15	18		
Agriculture	Moorestown	6	109	125	106	125		
Do	Keyport	6	66	81	64	80		
Astronomy	South Orange	12	128	214	39	80	3	5
Electricity	Paterson	12	141	217	54	70	3	6
Chemistry	Kearney	12	104	146	80	106	3	3
Architecture	Newark	12	245	256	240	250	4	9
Electricity	New Brunswick	12	38	60	28	40		1
Botany	do	12	26	48	31	38	4	10
Total		90	974	1,311	637	801	17	34

1893-94.

Subject.	Center.	Number of lectures.	Attendance.				Certificates.		Pass cards.	
			Lecture.		Class.		Hon- or.	Ordinary.	Hon- or.	Ordinary.
			Aver- age.	Maxi- mum.	Aver- age.	Maxi- mum.				
<i>A.—General.</i>										
Electricity	Newark	12	91	112	41	62	2	4		
English literature	South Orange	6	63	66	23	63			1	1
Do	Newark	12	204	223	119	184	7	10		
Ancient art	do	12	72	94	34	48	1	1		
Chemistry	South Orange	12	73	166	11	39		2		
Astronomy	New Brunswick	6	30	35	24	35			2	2
History	do	6	63	98	11	15			2	1
Do	do	6	86	101	25	26			2	2
Iron and steel	do	6	18	23	18	23				
Total		78	700	928	306	485	10	17	7	7
<i>B.—Agricultural.</i>										
Agriculture	Moorestown	6	61	65	61	65	1			1
Do	Mullica Hill	6	82	114	31	114				
Do	Red Bank	6	34	45	31	40	1			1
Do	Freehold	6	80	84	20	32				
Do	Newton	6	27	30	24	26	2			6
Economical botany	Haddonfield	6	75	100	75	100				10
Total		36	309	388	292	379	5			18

University of the State of New York.—Regents' Bulletin No. 24, published in March, 1894, gives the following summarized statement of extension courses of lectures offered by New York institutions:

Institutions.	Philosophy.	Social science.	Political science.	Economics.	Law.	Education.	Language.	Mathematical and physical science.	Geologic and biologic science.	Useful arts.	Fine arts.	American and English literature.	Foreign literature.	Geography and descriptions.	American history.	Foreign history.	Total number of courses.	Number of lecturers.
Columbia College							2	1		1	2	6	2			1	16	9
Union College	1									1		7					9	1
Hamilton College							1						1				2	2
Hobart College									1	1		1	1			1	5	2
University of the City of New York						1						1					2	2
Colgate University	2			1		1						12	8		1	3	30	20
University of Rochester				1				2	4			2		1			10	2
Alfred University									1		1						2	2
Vassar College				1												1	1	1
Cornell University	1			3		2	1	2	3	2		1		2	1		18	14
Syracuse University								1	2			1		2	1	1	10	5
Academies		2	1					2	2	1		1					9	9
High schools				1											1		6	4
Normal schools									3	1		2					6	6
Professional schools						1				3							4	3
Technical schools										1	4			1	1		3	5
Other lecturers	2	2	5	1	2		2	3	5	10	18	6	10	9	7		82	42
Total	4	4	3	13	1	7	4	11	19	16	17	55	19	16	18	14	221	121

The Ohio Society for the Extension of University Teaching consists of the following-named institutions: Ohio University, Kenyon College, Wittenberg College, Denison University, Marietta College, Oberlin College, Ohio Wesleyan University, Otterbein University, Buchtel College, Antioch College, Ohio State University, Hiram College, Baldwin University, Miami University, and Heidelberg University. The courses of lectures offered by these institutions for the year 1893-94 were as follows:

Number of courses of lectures offered in 1893-94 by the institutions comprising the Ohio Society for the Extension of University Teaching.

Institutions.	Philosophy.	Political science.	Economics.	Law.	Education.	Language.	Mathematical and physical science.	Geologic and biologic science.	Useful arts.	Fine arts.	American and English literature.	Foreign literature.	Theology and biblical literature.	American history.	Foreign history.	Geography and descriptions.	Hebrew race.	Physiology.	Agriculture.	Total number of courses.	Number of lecturers.
Antioch College			1				6				3	2								18	6
Baldwin University	1						1			4				1						8	2
Buchtel College							1				1									2	2
Denison University	3	1	1				2	2		1	2	2								9	5
Heidelberg University	3	1	2	1			2	3	1		6	2		2						25	8
Hiram College	3			2			1	3			3	2		2						12	6
Kenyon College	3	1					1				6	5		2	2		1			20	6
Marietta College	1	1		1	1		1	1	1	2			3	1	1					15	9
Miami University	2						2													4	2
Oberlin College	6	2	3		1	11	7	1	4	2	9	5	6	1	4			1		61	26
Ohio State University	5	5	1		1	12	16	2			8	3		2	4				2	63	28
Ohio University	2		1		1	1	2	1			3	1		1	2					15	11
Ohio Wesleyan University	1						4	4	1		7	3	3		8	1		1		28	13
Otterbein University	3						2	1			2	3								11	6
Wittenberg College	1											2	1	1						5	3
Total	34	10	9	3	4	2	48	36	6	7	54	27	19	6	19	2	1	2	2	201	128

*University Extension in Ohio,*¹ by Prof. Willis Boughton, Ohio University, Athens, Ohio.—In the past fifty years Ohio has furnished the nation with more than her quota of distinguished public men. Were anyone to ask the secret of this fruitfulness he would not go far astray who would simply point to her 34 colleges and universities. She has not one too many; not an ambitious young person need go a great distance in order to reach the doors of a good collegiate institution. With her many colleges, however, not a State can point to a harder-working corps of college men than Ohio has. Her institutions are full and their professors are worked to the utmost of human endurance. Little time can be found for the organization of university extension courses.

In order to keep abreast of the times in this work, the Ohio colleges have organized what is known as the Ohio Society for the Extension of University Teaching. Fifteen colleges are members of this league, as follows: Ohio University (Athens), Kenyon College (Gambier), Wittenberg College (Springfield), Denison University (Granville), Marietta College (Marietta), Oberlin College (Oberlin), Ohio Wesleyan University (Delaware), Otterbein University (Westerville), Buchtel College (Akron), Antioch College (Yellow Springs), Ohio State University (Columbus), Hiram College (Hiram), Baldwin University (Berea), Miami University (Oxford), and Heidelberg University (Tiffin). The official board of this society is at present (May 10, 1894), as follows: President, Dr. Charles W. Super, president Ohio University; vice-president, Prof. C. B. Austin, Ohio Wesleyan University; secretary, Prof. James Chalmers, Ohio State University; and treasurer, Dr. J. E. Stubbs, president Baldwin University. The Ohio society is an incorporated body, under the control of a board of eight trustees, consisting of Governor William McKinley, G. C. F. Southworth, John L. Zimmerman, Rev. Washington Gladden, Senator C. S. Brice, Commissioner O. T. Corson, William Bowler, D. S. Gray, and E. M. Thresher. The society has for its objects the organizations of centers and the concentration of energy.

While every college represented in the above league stands ready with two or more extension lecturers to serve any community that may call them to the work, the regular professors are too burdened with college affairs to spend any time in organizing local centers. The work that the Ohio society, then, recognizes as its special field is that of the organization of local centers in every part of the State. To do this requires money as well as State recognition. In the past two years the energy of the society has been spent in vain efforts to secure such assistance from the legislature as will enable it to place an organizing secretary in the field. Not long ago a bill was introduced creating the office of State director of university extension, and asking for an annual appropriation of \$2,500. In spite of the efforts of the friends of the movement, however, the bill failed to become a law. Yet ground was gained. All that is necessary is persistent, continuous effort; the end will be achieved as soon as our legislators become educated up to the proper degree of appreciation of the work.

Some of the individual colleges, however, have been active in advancing university extension in the State. The Ohio University has a few good workers. President Super has been president of the Ohio Society since its organization. He is an earnest friend of the movement. Prof. J. P. Gordy early in the year delivered a double course of lectures at Lima; six lectures being on the "History of Political Parties in the United States," and six on "Psychology as Applied to Teaching." He has given shorter courses at various other points in the State. Prof. William Hoover, who is director of the mathematical work at Chautauqua, has been busily engaged all the winter in correspondence work. He is employed by both Chicago University and Chautauqua. He is in correspondence with over forty students of mathematics, the most of his letters coming from Massachusetts, New York, Indiana, Illinois, Ohio, Wisconsin, and Iowa. Having the work systematized so that it can be done with the least waste of time, he can attend to a host of pupils. He reports that the results are very satisfactory, some of his students being thus led to take college courses.

¹ From *University Extension*, June, 1894.

Antioch College is an active university extension center, because it has in its faculty Prof. G. A. Hubbell. While several of the members of the faculty are ready to do this work, he has organized one or more centers and has delivered several courses of lectures on "American Literature." After a course of lectures has been completed, if there are any who choose to carry the work further, special classes are organized and regular recitations are held. Antioch College is also doing some correspondence work.

The Ohio State University is centrally located, and can easily reach the most flourishing portions of the State. Her faculty has attended all the calls that have come for extension lectures. Prof. James Chalmers, the secretary of the Ohio Society, has been active as a lecturer and as an organizer. One of the most successful courses was that of thirteen lectures at Circleville. One of these was by ex-President Scott on "Mind and Body," two by Professor Thomas on "Electricity," four by Prof. G. F. Wright (Oberlin) on "Man and the Glacial Period," and four by Professor Chalmers on "English Literature." Prof. G. W. Knight gave a course on "History at Washington," and several other courses were planned.

The University of Cincinnati, though not a member of the Ohio Society, has been more active in university extension than any other institution in the State. System and thoroughness are characteristics of the work there. It is the belief of the dean, Dr. W. O. Sproull, that the primary object of the movement is education, pure and simple. He seems to have little sympathy with the cries for popularizing the lectures and class work until the educational feature is endangered. It was assumed that many who were anxious for university extension were not prepared for work of a college grade. To meet the necessities of students, courses of "Introductory Work" were offered. Classes in Latin, Greek, and mathematics were formed at the Hughes High School. Every course was made to consist of thirty exercises. In order to accommodate teachers these classes were held on Saturdays. An idea of the success may be gained by noting that 51 persons almost immediately enrolled in one or more of these classes. Such was the preparatory work. At the university, classes of a collegiate grade were held. This, too, was day work. Every Saturday at 8.30 the classes began to assemble, and every hour of the day was occupied. The laboratories and the library were opened, and the extension students were given the use of all the college apparatus. To make the classes successful, it was announced that no course would be conducted unless at least 15 persons should register for it. Every course was to consist of 30 weekly exercises, a fee of \$10 dollars being charged for a full course. According to this method, classes were organized in ancient and modern languages, in science, in history, and in mathematics. The success of the system is attested by the fact that a total of 258 students were enrolled.

One feature of the work in Cincinnati ought to be outlined in full because of its novelty. This was a course of weekly lectures on the "Bible and Biblical Subjects," delivered on Saturday mornings at 10.30. The intention seems to have been to make the course a comparative study of the Bible. Lecturers were therefore chosen from every sect and denomination, as follows: "The Ethics of Moses," by Rev. I. M. Wise, D. D., president of Hebrew Union College; "Old Testament and New Testament Canons," by Prof. M. S. Terry, Ph. D.; "The Transmission of the Bible," by Rev. C. W. Rishell, Ph. D.; "The Revised Version," by Prof. W. W. Davies, Ph. D., professor of Hebrew, Ohio Wesleyan University; "Discovery and Decipherment of the Monuments," by Prof. I. M. Price, associate professor of Semitic languages and literature, University of Chicago; "Egypt in the Days of Abraham, Joseph, and Moses," by Prof. J. R. Lampey, D. D., professor of Old Testament literature, Baptist Theological Seminary, Louisville, Ky.; "Monumental Traditions and Genesis I to XI," by Prof. I. M. Price; "The Bible as Literature," by Rev. George A. Thayer, D. D.; "Some Traits of the Hebrew Prophets," by Prof. Edwin Cone Bissell, D. D., professor of Old Testament literature and exegesis, McCormick Seminary, Chicago; "The Messianic Idea in Prophecy," by Rev. T. W.

Chambers, S. T. D., New York City; "Job," by Rev. Dudley Rhodes, D. D.; "The Psalms," by Rev. F. W. Baker, B. D.; "Ecclesiastes," by Rev. Lewis Brown, B. D.

While statistics of the work in other parts of the State are not at hand, it is probable that some courses not mentioned above have been delivered. The spirit of the movement is abroad in our State. The newness and glamour have worn off, yet the past year's work has exceeded that of any previous season. When we have a State organizer we hope to do much more than we can at present.

Glancing over the work of the past year, it is evident that the institutions for higher education in Ohio might be doing much more than they are. The University of Cincinnati has done nobly. Its work has been of an educational character, and has been graded; but it has mistaken one of the most vital functions of university extension. It has overlooked the fact that the object of the movement is to carry university learning out to the people and out to all people. Its students are still compelled to come to the university buildings for instruction, and to come on Saturday. Only those who will in some way find an opportunity for self-improvement can take advantage of this work. Except teachers, few mature persons can spend even Saturday in this way. The clerk, the mechanic, the business man, the seamstress, can attend to self-improvement only when business hours are over. Mechanics' Institute of Cincinnati would not flourish were not its instruction given in the evening. The University of Cincinnati might reach many deserving people if it could organize local centers in various parts of the city and in the suburbs and there hold evening sessions.

What the University of Cincinnati is doing, Western Reserve and the Ohio State universities might be doing for their cities. Both are located in large cities. The same amount of energy expended in organization would produce like results. There might at both places be held Saturday classes; but both could with little labor organize several flourishing local centers, that might be instrumental in molding society and in awakening the youth to the advantages of an education.

Most of the other institutions of the State are located in the rural portions. Saturday classes would be impracticable. The work must be done in well-organized local centers. Every town of 1,000 population is able to support at least one course every season. Such a course would awaken a rural community to new life. Ohio is full of thrifty towns. All university extension needs is organization. If every college had an organizer, each instructor would be forced to do all the extension work that he could do. But organizers are scarce, and all colleges can not afford to employ a man for that work. Thus arises the call for the Ohio Society.

The immediate work of the State Society would seem to be to place an organizer in the field. Two years have been spent in vain attempts to secure State aid. Just as the American Society raised a guaranty fund to insure its life for five years, so the Ohio Society ought to act. The State of Ohio is wealthy enough. There are wealthy citizens who are loyal. A guaranty fund ought to be raised that would permit the society to place one or two men in the field to organize, and thus to call out the college men. The society can not afford to remain inactive until another legislature convenes. Two years of valuable time will thus be lost. A guaranty fund should be raised and an organizer placed in the field at once. Then from her score and a half of colleges Ohio shall be transmitting the greatest blessings to the greatest number of her citizens.

University of Cincinnati, Cincinnati, Ohio.—During the year 1893-94 instruction was given in six subjects, with a total attendance of 257.

For the year 1894-95 the courses announced below will be offered. They are open to all persons competent to engage in the work, but are intended especially for those of some maturity. As a rule, they include the most essential features of the corresponding university courses. They are given on Saturdays, at the university building, when the libraries, collections, and other facilities of the institution will be placed at the service of the classes. The fee for each course of 10 or 12 exercises is \$4; of 20 exercises, \$7; of 30 exercises, \$10.

Courses: Latin—30 lectures and exercises. Cicero, *De Natura Deorum*; with lectures on Greek Philosophy. Plautus, *Captivi* and *Menaechmi*. Terence, *Andria*; with lectures on early Latin Poetry and Latin Comedy. Greek Literature—10 lectures. A study of Ancient Greek Poetry, from Homer to Aristophanes; arranged for those unfamiliar with the Greek language. Greek Archaeology—10 lectures. A course based chiefly on the architecture and sculpture of the Acropolis of Athens. English Literature—12 lectures. Lectures on the Poets of the Nineteenth Century, illustrated by readings. A syllabus, with lists of critical readings, will be provided. French Literature—10 lectures. A study of leading French writers of the Nineteenth Century. Spanish—30 exercises. Training in grammar, composition, and easy translation. Spanish Literature—30 exercises. Lectures and translations from modern authors. The class is conducted in Spanish. Psychology—20 lectures. The subject of knowledge and kindred topics in psychology and ethics. History—20 lectures. Modern history from the peace of Westphalia. Analytical Geometry—20 exercises. Construction of loci; equations of the right line and of the conic sections. General equations of the second degree; loci of the different orders. Electricity—10 lectures. Electricity and its applications, illustrated by experiments. Chemistry—30 exercises and lectures. Illustrated lectures preceded or followed by four hours of laboratory practice in experimental chemistry. Advanced work also in qualitative and quantitative analysis and toxicology. Charge for chemicals, \$10. Graphical statics—30 exercises. General principles and applications to the construction of roofs and bridges. Astronomy—10 lectures. Historical development; the Observatory and its instruments; stars, nebulae; structure of the Universe.

Elementary courses in subjects preparatory to college work—Greek, Latin, English, mathematics, chemistry, physics—are also offered on Saturdays by the teachers of the Hughes and Woodward High Schools.

University of Oregon, Eugene, Oreg.—The president delivered two courses of 12 lectures each on English literature. At Portland the average attendance was 125, while at Salem it was 60.

Pacific University, Forest Grove, Oreg.—The president delivered one course of 6 lectures on political economy at Portland, with an attendance of 50.

Willamette University, Salem, Oreg., offers a course of 6, 12, or 18 lectures on current history; a course of 12 lectures on the history and theory of money, and courses of 6 lectures on each of the following topics: Production and its problems, monopolies, taxation, distribution, labor question, methods of social reform, charities and corrections, anthropology, and the native races of North America. One course of 6 lectures on current history was delivered in 1893-94 at Ashland, Oreg. The attendance was 600.

American Society for the Extension of University Teaching.—The work of this society for the year 1893-94 is given in the following tabular statement, furnished by Dr. Edward T. Devine, director:

Location of center.	Subject of course.	Number of lectures in course.	Average attendance at lectures.	Average attendance at class.	Average number of weekly papers.	Passed examinations.
Altoona	American Political History	6	89	60	4	3
Do.	English Poets of Revolution Age	6	100	75	2	3
Association Local	Algebra	10	22	20	4	4
Do.	Shakespeare	6	90	44	.....	.....
Do.	Age of Chaucer	3	275	.....	.....	.....
Do.	Formative Influence in American History	6	405	.....	.....	4
Do.	Civics	10	63	.....	.....	3
Do.	Experimental Psychology	10	118	.....	.....	1
Atlantic City, N. J.	Representative American Authors	6	145	112	.....	2
Bethlehem	English Literature	6	166	150	.....	.....
Do.	Political Economy	6	150	.....	.....	.....
Birmingham	American Political History	6	75	25	3	.....
Bradford	English Poets of Revolution Age	6	254	250	15	.....
Do.	Shakespeare	6	150	100	.....	.....

Location of center.	Subject of course.	Number of lectures in course.	Average attendance at lectures.	Average attendance at class.	Average number of weekly papers.	Papers examined.
Buckingham	Causes of National Prosperity	6	50	50	7	4
Butler	English Poets of Revolution Age	6	180	100	4	3
Camden, N. J.	Shakespeare	6	109	50	4	2
Do.	Egypt and Israel	6	137	100	4	3
Do.	American Political History	6	137	70		
Carlisle	Shakespeare	6	225	225	2	1
Chambersburg	Protestant Reformation	6	125	100	6	4
Chester	Life in Ancient Cities	6	93	90	3	2
Claghorn School	Civics	10	10	10	3	3
Clearfield	Shakespeare	6	150	5		
Cumberland, Md.	American Political History	6	65	25	1	
Downingtown	Political Economy	6	100	8		
Doylestown	American Political History	6	117	90	5	
Dunkirk, N. Y.	English Poets of Revolution Age	6	148	104		
Do.	Shakespeare	6	148	50		
East Boston, Mass.	Electricity	12	100			
Eric	English Poets of Revolution Age	6	140			
Do.	Shakespeare	6	157			
First Baptist Church	Civics	10	10			
First Presbyterian Church	do	10	21	21	6	6
Frankford	American Literature	6	131	131	4	3
Do.	Reformation	6	52	7		3
Franklin	English Poets of Revolution Age	6	230			6
Do.	Shakespeare	6	145	115	8	4
Germantown, Phila.	Life in Ancient Cities	6	200	30		
Do.	Shakespeare	3	250	50		
Gettysburg	Representative American Authors	6	190	170		2
Germantown School	Literature (American Poets)	10	35			
Girard College	Civics	10	15			
Grace Methodist Episcopal Church.	American Literature	10	70			
Greensburg	American Political History	6	94	80		
Do.	Shakespeare	6	124	100		2
Greenville	English Poets of Revolution Age	6	213	180	8	5
Do.	Shakespeare	6	130	75	4	1
Grove City	English Poets of Revolution Age	6	125			
Do.	Shakespeare	6	126	100		
Haddonfield, N. J.	American Literature	6	175	25	25	9
Hagerstown, Md.	American Political History	6	60			
Hammonton, N. J.	Political Economy	6	58	54		
Hancock School	Civics	10	14			
Harrisburg	American Statesmen	6	152	75	3	2
Hebrew Literary Society	Physiology and Hygiene	10	180	180	10	10
Hestonville	American Political History	6	82	12		
Holland Presbyterian Church	Civics	10	19			
Holidaysburg	do	6	75			
Do.	Shakespeare	6	85	35		
Hunter School	English Literature	10	33			
Huntingdon	American Political History	6	103	20		
Indiana	Shakespeare	6	245	167	95	71
Johnstown	American Political History	6	95	45	7	1
Kensington	Civics	6	40	40		
Lambertville	Electricity	6	130			
Lancaster	American Political History	6	100	85		
Langhorne	English Novelists	6	75			8
Latrobe	English Poets of Revolution Age	6	91	50	6	5
Lehigh Avenue	English Literature	6	89	50		2
Do.	Civics and Political Economy	10	46			5
Martinsburg, W. Va.	Shakespeare	6	80	15		3
Meade School	Civics	6	32			1
Manayunk School	American Literature	10	23			
Do.	Civics	10	16			
Mercer	English Poets of Revolution Age	6	150	50	2	1
Millville	Epochs in American History	6	75	50		1
Muncy	Representative American Authors	6	180	170	10	5
New Brighton	English Poets of Revolution Age	6	157	115		
New Castle	do	6	110			
Do.	Shakespeare	6	85	80		3
New Century Club	Rise of the Drama	2	250			
New Hope	Political Economy	6	75			1
Newtown	do	6	90		2	2
New Wilmington	English Poets of Revolution Age	6	150	64	1	
Do.	Shakespeare	6	150	82	25	13
Niagara, Philadelphia	American Political History	6	66	60		
North Broad Street Presbyterian Church.	Civics	10	23			

Location of center.	Subject of course.	Number of lectures in course.	Average attendance at lectures.	Average attendance at class.	Average number of weekly papers.	Passed examinations.
Northminster Presbyterian Church.	Civics	10	54			
Oak Lane, Philadelphia.	English Literature	6	88	81	2	
Oil City.	English Poets of Revolution Age	6	148	70	4	1
Do.	Shakespeare	6	75	50		1
Protestant Episcopal Church of Covenant.	Civics	10	30			
Protestant Episcopal Church of Crucifixion.	do	6	16			
Protestant Episcopal Church of Holy Apostles.	Literature	10	64			1
Do.	do	6	31			
Phillipsburg.	American Political History	6	105	70	2	1
Do.	Shakespeare	6	160	50	2	1
Peirce School of Business.	Civics	6	72	40	5	5
Reading.	Astronomy	6	285			
Do.	Life in Ancient Cities	6	140			
Do.	American Political History	3	140			
Bewickley.	English Poets of Revolution Age	6	180	150	5	
Do.	Shakespeare	6	170	130		
South Philadelphia.	English Literature	6	214	175	5	
Spring Garden.	Comparative Religion	6	251	200	2	
Spring Garden.	American Political History	6	35	20		1
Springfield, Mass.	United States History	6	300	150	5	4
Do.	Problem of Money	6	300			
Southeastern branch of Young Men's Christian Association.	Civics	10	16			8
Do.	American History	10	32			
St. James Protestant Episcopal Church.	Civics	10	16			
St. Matthias Protestant Episcopal Church.	The Conflict Between Mohammedanism and Christianity	10	35			3
Tarrytown, N. Y.	American Political History	6	80	23	2	
Titusville.	English Poets of Revolution Age	6	333	50	38	
Do.	Shakespeare	6	300			
Touro Hall, Philadelphia.	Civics	6	200			4
Trenton, N. J.	Electricity	6	331	63		
Do.	Religions of the World	6	212	212		
Do.	Astronomy	6	195	190		
Tulane University, Louisiana.	English History Illustrated by Shakespeare's Plays	7	250	125	18	14
Uniontown.	English Poets of Revolution Age	6	112	45	3	3
Walnut Street Presbyterian Church.	Civics	10	30			
Warren, Pa.	English Poets of Revolution Age	6	300	200	12	2
Do.	Shakespeare	6	154	120	9	4
Warren, Ohio.	English Poets of Revolution Age	6	195	150	2	
Do.	Shakespeare	6	195			
Waynesburg.	English Poets of Revolution Age	6	120	100	4	4
Do.	Shakespeare	6	97	60		
Webster School.	American Literature	10	18			
West Chester.	Europe Finds America	6	190			4
West Philadelphia.	Greek History	5	51			
Do.	Greek Literature	3	188	75		
Do.	Literary Study of Homer	6	83	60	1	
Do.	Life in Ancient Cities	6	161	70		
Williamsport.	Representative American Authors	6	90	80		
Do.	English Novelists	6	93	87		
Woodbury, N. J.	English Literature	6	196		2	
Do.	American Literature	6	113			
Yardley.	Representative American Authors	6	56	30	4	2
York.	do	6	85			1
Young Men's League of Holy Trinity Protestant Episcopal Church.	Civics	3	17			
Young People's Association, St. Matthias Protestant Episcopal Church.	English Literature	10	19			3

The second session of the university extension summer meeting¹ of the American Society, which took place last month (July, 1894) was a gratifying success in nearly

¹From University Extension, August, 1894.

every particular. The registration of students in the meeting reached 330, of which number 195 attended the courses in the five departments of literature, science and art, mathematics, pedagogy, history and civics, and economics and sociology; and 135 took the courses in the department of music, in which we include the students in the summer music school held in connection with the summer meeting. With the exception of music, the attendance was somewhat equally divided among the various departments, the number following the lectures in economics being greatest. The total number of lectures given during the four weeks of the meeting amounted to 504. The corps of lecturers numbered 64. The courses offered in the second session were much greater in number and variety than those of the first summer meeting in 1893, as one may learn from the fact that there were enough lectures in each of the six departments of the meeting just closed to take up the entire time of the students during the four weeks. The department which attracted most attention was the one given up to economics and sociology. The lecturers represented the most advanced scientific thought in the United States, and the success of their courses was very marked. Among the students following them a large proportion was made up of college professors and instructors and graduate students in these branches. The lectures were intended mostly for teachers, and the well-filled notebooks which the students carried away with them testify to the substantial and instructive nature of the lectures. Another feature of the meeting deserves special mention, namely, the lectures and conferences upon the best methods of teaching and study. Great attention was given this subject, in every department lectures being given by teachers of long and varied experience, greatly to the profit of the great number of teachers present.

Brown University, Providence, R. I., offers courses of 10 lectures, each on the following subjects: Botany; the Shakespearian drama; the novel—Shakespeare, Wordsworth, Shelly, and Browning; zoology; physiology; psychology; biology; political economy and banking; elementary physics; Shakespeare; Bible lands; French language and literature; libraries, books, and reading; history of music; Greek history and literature; English literature; mediæval and modern history; period of the reformation; Homer in English; botany; classical archæology; history of philosophy; English literature; pedagogics; astronomy; German language and literature; social science. During 1893-94 16 courses were delivered to audiences that numbered about 600.

University of the South, Sewanee, Tenn.—There were delivered at Sewanee the following lectures: three on Goethe, with an attendance of 125; 2 on Tennyson, with an attendance of 150; 3 on the transportation problem, and 3 single lectures.

University of Texas, Austin, Tex., offers courses of not more than 6 lectures on English literature; chemistry; geometry; formation of the American Union; dynamic geology; beginnings of the English drama; psychology; German literature; French literature; education and pedagogy; biology; and Greek literature.

Richmond College, Richmond, Va., gave 3 courses of 6 lectures each at Richmond, on the following subjects: Poetry of the ancient Greeks, attendance 75; French literature in seventeenth century, attendance 100; applied electricity, attendance 120.

University of Wisconsin, Madison, Wis.—At the opening of the year 1893-94, 37 courses of 6 lectures each were offered, as follows: English School of Philosophy; History of Ethics; Æsthetics; English Literature; Shakespeare; English Poets and the French Revolution; Early Scandinavian History and Literature; Greek Literature; Greek Life; Socialism; Distribution of Wealth; Colonization of North America; United States Politics, 1789-1840; English Constitution; Practical Economics; European History in the Nineteenth Century; Economic Problems of the Day; Money and Credit; The Making of Wisconsin; The History of England; Women's Place in Social Economics; The Ethics of Domestic Science; Public Finance; Oratorical Delivery; Phonetics; Bacteriology; Physiology of Plants; Geology; Physiology; Chemistry; Chemistry of the Alkaloids and Ptomaines; Chemistry of Camphors and Terpenes; Astronomy.

The courses delivered during the year were as follows:

Location of center.	Subject of course.	Number of lectures in course.	Average attendance at lectures.	Average attendance at class.	Average number of weekly papers.	Passed examination.	Rejected.
Antigo, Wis.	English Literature.	6	120	80	4		
Sturgeon Bay, Wis.	do.	6	60	60	2		
Racine, Wis.	do.	6	250	100	2		
Sparta, Wis.	Shakespeare.	6	181	90			
Do.	Bacteriology.	6	184	78			
Winona, Minn.	Shakespeare.	6	250	120	2		
Do.	Bacteriology.	6	178	82			
La Crosse, Wis.	Shakespeare.	6	210	85			
Do.	Bacteriology.	6	178	82			
Appleton, Wis.	Shakespeare.	6	300	100	2		
Milwaukee, Wis.	do.	6	350	300	3		
Do.	Esthetics.	6	350	50			
Do.	Ethics.	6	250	80			
Oshkosh, Wis.	Shakespeare.	6	350	300			
Do.	Economics.	6	150	125			
Do.	History in Nineteenth Century.	6	170	40			
Galesburg, Ill.	Private Property.	6	150	75			
Do.	Bacteriology.	6	240	115	1	1	
Cincinnati, Ohio.	Socialism.	6	400	200			
Eau Claire, Wis.	Economics.	6	375	300			
Elroy, Wis.	do.	6	180	125			
Green Bay, Wis.	do.	6	225	200	1		
Rockford, Ill.	do.	6	247	200	4		
Waupun, Wis.	do.	6	175	150	3		
Kenosha, Wis.	do.	6	250	225	4	3	
Waupaca, Wis.	do.	6	225	200	8	5	
Stevens Point, Wis.	do.	6	200	175	3		
Do.	American Colonization.	6	150	50	6	3	
Lancaster, Wis.	do.	6	150	50			
Do.	Bacteriology.	6	184	40			
Baraboo, Wis.	American Colonization.	6	150	75	2	1	
Green Bay, Wis.	American Politics.	6	200	100			
Fox Lake, Wis.	do.	6	150	50	6	3	
Jefferson, Wis.	do.	6	150	140	4	2	
Kaukauna, Wis.	do.	6	150	100			
Prairie du Chien, Wis.	History of Wisconsin.	6	91	29			
Wausau, Wis.	Astronomy.	6	330				
Merrill, Wis.	do.	6	175				
Hudson, Wis.	Bacteriology.	6	225	200			
River Falls, Wis.	do.	6	135	75			
Menomonie, Wis.	do.	6	100	40			

University of Wyoming, Laramie, Wyo.—The following courses of 6 lectures each are offered: Political Economy; Psychology; Geology; Greek and Roman Literature; Normal School Work; French and German Literature; Horticulture; Electricity and Magnetism; Chemistry of Food; English and American Literature.

Correspondence courses are offered in Political Economy, Geology, Physics, Botany, Biology, Beginning Latin, Beginning Greek, Latin Literature (in English), Greek Literature (in English), Normal Methods, School Management, Psychology, Philosophy of Education, History of Education, Elementary Algebra, Mechanics, Experimental Psychology, Elementary Geometry, Astronomy, German Literature, French Literature, Ancient History, Modern History, American History, Constitutional History of the United States

REPORT OF THE SCHOOL OF APPLIED ETHICS.

The School of Applied Ethics has held three summer sessions, with increasing success, in the historic town of Plymouth, Mass. The last session continued five weeks, from July 12 to August 15, 1894. The other two—of six weeks each—were held in 1891 (July 1 to August 12) and 1892 (July 6 to August 17). The school has, thus far, had three departments—ethics, economics, and history of religions—under the direc-

tion, respectively, of Prof. Felix Adler, of New York; Prof. H. C. Adams, of the University of Michigan, and Prof. C. H. Toy, of Harvard University, who have each in turn acted as dean of the school.

First session (1891, H. C. Adams, dean).—The first year the faculty, including Sunday lecturers, numbered 29, and 116 lectures in all were given. The general subjects treated in the three departments were as follows:

I. Department of Economics.—History of Industrial Society and Economic Doctrine in England and America, 16 lectures by Prof. H. C. Adams, University of Michigan; Modern Agrarianism, 3 lectures by Prof. J. B. Clark, Smith College; Social Questions Suggested by the Crowding of Cities, 4 lectures by Albert Shaw, editor Review of Reviews; Cooperation and Workmen's Insurance, 3 lectures by Prof. F. W. Taussig, Harvard University; Factory Legislation in England and the United States, 3 lectures by Hon. Carroll D. Wright, United States Commissioner of Labor; Education in its Social and Economic Aspects, 3 lectures by Prof. E. J. James, University of Pennsylvania; Socialism, 3 lectures by Pres. E. Benj. Andrews, Brown University.

II. Department of Ethics.—The Moral Instruction of Children, 18 lectures by Prof. Felix Adler; Politics and Ethics, 3 lectures by Prof. R. E. Thompson, University of Pennsylvania; The Indian Question, 2 lectures by Prof. J. B. Thayer, Harvard University, and 2 by Herbert Welsh, Secretary Indian Rights Association; Criminals and the State, 3 lectures by Dr. Charlton T. Lewis, New York; The Problem of Charity in Great Cities, 3 lectures by J. H. Finley, secretary State Charities Aid Association of New York; Reform Movement among Workingmen, 3 lectures by W. L. Sheldon, St. Louis; Humane Treatment of Animals, 2 lectures by Prof. William E. Sheldon, Boston; Vivisection, 1 lecture by Mrs. Caroline Earle White, president S. P. C. A., Philadelphia; Ethical Theory, 3 lectures by William M. Salter, Philadelphia.

III. Department of History of Religions.—The History, Aims, and Method of the Science of History of Religions, 18 lectures by Prof. C. H. Toy, Harvard University; The Babylonian-Assyrian Religion, 3 lectures by Prof. Morris Jastrow, jr., University of Pennsylvania; Buddhism, 3 lectures by Prof. M. Bloomfield, Johns Hopkins University; Mohammedanism, 3 lectures by Prof. George F. Moore, Andover Theological Seminary; The Greek Religion, 3 lectures by Prof. B. I. Wheeler, Cornell University; The Scandinavian Religion, 3 lectures by Prof. G. L. Kittredge, Harvard University; The Laic Religion of the Middle Age, 3 lectures by Mr. W. W. Newell, editor of the Journal of American Folk-Lore.

Sunday afternoon lectures.—The New-Jerusalem Church, Prof. J. F. Wright (Swedenborgian); Modern Judaism, Rev. R. De Sola Mendes, D. D. (Jewish); Unitarianism, Rev. H. Price Collier (Unitarian); The Problem of Church Unity, Rev. George Dana Boardman, D. D. (Baptist); The Christianity of Christ Applied to Nineteenth Century Life, Rev. B. E. Warner, D. D. (Episcopalian).

Second Session (1892, Prof. C. H. Toy, Dean).—The second year there were 22 lecturers. Ninety-six lectures were given, including those on Sunday afternoon. There were no lectures on Wednesday, that day having been set apart for conferences and other special meetings. This experiment was regarded favorably, but was not repeated during the present year, as it was decided to limit the Session to five weeks. The Subjects of the different courses in 1892 were as follows:

I. Department of Economics.—Changes in the Theory of Political Economy Since Mill, 5 lectures by Prof. H. C. Adams, University of Michigan; The Theory of Social Progress: a Study in Sociology, 5 lectures by Prof. F. H. Giddings, Bryn Mawr College; Self-Help and Legislation for Promoting it, 3 lectures by Prof. F. W. Taussig, and 2 by Mr. Edward Cummings, Harvard University; The Function of Philanthropy in Social Progress, 2 lectures by Father J. O. S. Huntington, "The Holy Cross," Westminster, Md.; 2 by Miss Jane Addams, "Hull House," Chicago, and 1 by Mr. Robert A. Woods, "Andover House," Boston; Statistical Presentation of Industrial Problems, 5 lectures by Hon. Carroll D. Wright, Commissioner of Labor, Washington, D. C.; Critical Study of the Labor Problem and of the Monopoly Problem, 5 lectures by Prof. H. C. Adams.

II. Department of Ethics.—The Beginnings of Reflective Speculation on Ethical Problems (An Historical Survey of Greek Ethics), 15 lectures by Mr. Bernard Bosanquet, of London, formerly Fellow and Tutor of University College, Oxford; The Moral Evolution of our Political Institutions, 3 lectures by Mr. W. L. Sheldon, St. Louis; The Relation of the Church to Civil Government, Historically and Legally Considered, 8 lectures by Prof. John W. Burgess, Columbia College; The Idea of Justice, with its Political and Economic Applications, 3 lectures by Mr. William M. Salter, Philadelphia; The Principles of Administration of Charity and its Chief Dangers, 1 lecture by Mr. Bernard Bosanquet, London.

III. Department of History of Religions.—The Hebrew Religion: The Prophets, 5 lectures by Prof. George F. Moore, Andover Theological Seminary; The Religion of Ancient Persia, and its Relations to Judaism, 5 lectures by Prof. A. V. Williams Jackson, Columbia College; The Ritual Law, 5 lectures by Prof. Morris Jastrow, jr., University of Pennsylvania; The Psalter, 5 lectures by Prof. John P. Peters, formerly of University of Pennsylvania; The Wisdom Books, 5 lectures by Prof. C. H. Toy, Harvard University; The Talmud, 5 lectures by Dr. Emil G. Hirsch, Chicago.

Sunday afternoon lectures.—Religion as a Social Force, Judge W. C. Robinson, Yale University; The Relation of New Testament Criticism to Religious Belief, President Orello Cone, Buchtel College, Akron, Ohio; Ethical Ideals in Business, Prof. Robert Ellis Thompson, D. D., University of Pennsylvania; The Kingdom of Humanity, Father J. O. S. Huntington; Ethics and Religion, Prof. B. P. Bowne, Boston University; An Ethical View of Life, William M. Salter, Philadelphia.

On account of the World's Fair Congress, in which many of those connected with the school took part, it was decided not to hold a session in the summer of 1893.

Third Session (1894, Prof. Felix Adler, Dean).—This last summer the school had a faculty of 25 lecturers, besides the 5 who spoke on Sunday afternoons, and altogether 101 lectures were given.

The apprehension felt by some that the attendance might be smaller than usual, on account of the general business depression, was immediately dispelled upon the opening of the school.

The inaugural exercises on the evening of July 12 drew a full house. The enrollment of students from different parts of the country, consisting chiefly of clergymen of various denominations, college instructors, teachers, and post-graduates was much larger than at any previous session.

The lectures began Thursday, July 12, in the new high-school building, recently erected at a great cost to the town, which is well lighted and ventilated, and admirably fitted for the summer meetings of the school. With the exception of the Educational Week, all the lectures were held in the morning, the attendance at the different courses varying from about fifty to one hundred and fifty. The Sunday afternoon lectures invariably drew an audience of several hundred.

Not only in attendance, but in the unity of the programme, and in the sustained interest with which the various courses in the different departments were followed, this session was a marked advance over those of previous years. The general subject in each department was the labor question, which was treated from various points of view by a large corps of able lecturers, including some of the foremost political economists of our leading colleges and universities, and other distinguished scholars. Two important lectures were given which were not on the regular programme. One was by the secretary of the late royal commission on labor, Mr. Geoffrey Drage, who visited the school, and by special invitation gave a valuable and interesting impromptu account of the aims, methods, and results of the Royal Labor Commission. The other unexpected feature was an able address by Prof. J. Estlin Carpenter, of New Manchester College, Cambridge, England, on "The Ethics of Buddhism," and its bearings upon some of our present problems.

Special mention should be made of the conference of educators on the relation of education to ethics and sociology, which drew together many prominent educators. On account of the interest awakened it has been decided to give educational sub-

jects a permanent place in the programme of the School of Applied Ethics. An editorial in the *Educational Review* of October, upon the educational conference of last summer, says:

"Nothing could have afforded a better illustration of the great interest thinking people now so universally take in the study of educational questions than the success of these meetings. . . . The audience increased in size from session to session, and the evening discussions which followed the lectures were animated. . . . The importance of a careful consideration of the relations of the school to ethical, social, and industrial questions by such audiences as assemble at the Summer School of Ethics, and the practical value of bringing these considerations home to professional and nonprofessional minds alike, are not likely to be overestimated."

The lectures of the recent session were more widely and fully reported than in previous years. The *Associated Press* gave regular reports, for the first time, and the *Boston Evening Transcript* had a special correspondent, who gave excellent daily reports of two, three, and four columns. The *Springfield Republican* also published comprehensive weekly reports by a special correspondent. Valuable accounts of the work of the school have appeared in the *Congregationalist*, *Journal of Education*, and other papers. In an editorial on "Summer Schools" the *Congregationalist* says:

"Especially significant is the interest taken in the great social and economic questions so vitally connected with the life of the people. The Plymouth School of Ethics is a conspicuous illustration, where able men have discussed with profound study of historical and of present conditions, apart from all political or sectarian bias, the historical relations between church and state, the growth of labor organizations and their relation to the Government, socialism and its practical working, and kindred topics, which concern the happiness and usefulness of every citizen. Schools like this must tend to attract large numbers, while reports of their doings will be widely read. Work of this sort gives added confidence in the ultimate success of democratic government."

Rev. Wm. H. Johnson, of Cambridgeport, Mass., wrote to the Conservator as follows: "It would be difficult, I think, to overestimate the influence which this school is exerting on the development of thought among us. Inspiring teachers, lecturers, and preachers, it is making itself felt most widely and helpfully."

A list of the general subjects treated by the different lecturers is given below:

I. Department of Economics.—Relation of Economics to Social Progress: Historical Basis of Modern Industries, 5 lectures by Prof. H. C. Adams, University of Michigan; Relation of Economic Theory to Social Progress, 4 lectures by Professor Adams; Civilization and Money, Their Relation Illustrated by the History of Money, 3 lectures by President E. Benjamin Andrews, Brown University; The Ethics and the Economics of Distribution, 3 lectures by Prof. J. B. Clark, Amherst College; The Social Functions of Wealth, 3 lectures by Prof. F. H. Giddings, Columbia College; Ethical Basis for Social Progress in the United States, 3 lectures by Prof. Richmond Mayo Smith, Columbia College; Practical Problems in Municipal Economy, 3 lectures by Prof. E. R. L. Gould, Johns Hopkins University; Relation of Political and Industrial Reform, 3 lectures by Prof. J. W. Jenks, Cornell University; The Transportation Problem, 3 lectures by Professor Adams.

II. Department of Ethics.—Ethics and the Labor Question: Outlines of Economic Ethics, 12 lectures by Prof. Felix Adler, New York; The Ethical Ideal of the State, 3 lectures by Prof. Woodrow Wilson, Princeton University; The Fundamental Nature of Government and its Possible Functions in Relation to the Industrial Problem, 3 lectures by William M. Salter, Philadelphia; Moral Forces in Dealing with the Labor Question, 1 lecture by Mr. Salter; The Relation of the Family to the Labor Question, 3 lectures by Mrs. Anna Garlin Spencer, Providence, R. I.; The Social Christ, 3 lectures by Rev. Robert A. Holland, S. T. D., St. Louis; The Work of the Royal Labor Commission, 1 lecture by Mr. Geoffrey Drage, Secretary of the Royal Labor

Commission of London; The Ethics of Buddhism, 1 lecture by Prof. J. Eastlin Carpenter, Manchester College, Oxford. Relation of education to ethics and sociology: The Relation of the School to the Labor Problem, 3 lectures by President James MacAlister, Drexel Institute, Philadelphia; Industrial History as an Element of Historical Study, 1 lecture by Prof. W. J. Ashley, Harvard University, followed by discussion; The Ethical Element in Physical Training, 1 lecture by William G. Anderson, M. D., associate director of gymnasium, Yale University, followed by discussion; Organic Education, 1 lecture by Prof. Felix Adler; The Educational Movement in Europe in Relation to Social and Political Movements, 1 lecture by William H. Burnham, Ph. D., Clark University; The School as an Ethical Instrument, 1 lecture by Prof. George H. Palmer, Harvard University, followed by discussion; The Ethical Element in the Kindergarten, 1 lecture by James L. Hughes, Toronto, Canada.

III. Department of History of Religions.—The Church and the Labor Question: The Old Testament and the Labor Question, 6 lectures by Prof. C. H. Toy, Harvard University; Relation of the Early Christian Church to the Social Question, 6 lectures by Prof. Henry S. Nash, Cambridge Episcopal Theological School; Islam and the Labor Question, 6 lectures by Professor Toy; The Mediæval Church and the Labor Question, 6 lectures by Prof. W. J. Ashley, Harvard University; The Modern Church and the Labor Question, 6 lectures by Mr. John Graham Brooks, Cambridge, Mass. In connection with this department a paper, entitled *Peccatum Philosophicum*, by Mr. Henry C. Lea, of Philadelphia, was read.

Sunday afternoon lectures.—St. Francis of Assisi, Rev. S. M. Crothers, St. Paul, Minn.; Savonarola, Mr. Thomas Davidson, Brooklyn; Meister Eckhart, Prof. Josiah Royce, Harvard University; William the Silent, Rev. George Hodges, D. D., dean of the Cambridge Episcopal Theological School; Gregory the Great, Rev. Thomas Shahan, D. D., Catholic University, Washington, D. C.

Historical lectures.—New England and the English Commonwealth, Edwin D. Mead, Boston; The Pilgrims, their Origin, Career, and True Character, Hon. William T. Davis, Plymouth, Mass.

The interest of those in attendance at the last session was shown by the formation of an "Auxiliary Society of the School of Applied Ethics," with the special object of making the school and its work more widely known and to further its interests in other ways. The membership fee was fixed at \$5 a year. Permanent officers were elected and over fifty members were at once enrolled. Anyone may join the Auxiliary Society, and it is suggested that all persons interested in the work of the school should enroll themselves as members. Members of the Auxiliary Society will be credited with the amount of the membership fee on the tuition of the next regular session, either for themselves or others whom they may designate.

The secretary and treasurer of the Auxiliary Society is Rev. Paul R. Frothingham, New Bedford, Mass.

CHAPTER VII.

PROFESSIONAL EDUCATION.¹

THEOLOGICAL SEMINARIES.—*An educated ministry—Collegiate training of theological students—Women in theological seminaries—Benefactions—Degrees—Better preachers.*
MEDICAL SCHOOLS.—*Larger number of students—Schools of medicine—Special courses—No homeopathy in the South—Women students—Percentage of students graduating.* **NURSE TRAINING.**—*Education necessary—Wages of nurses—Subjects of instruction.* **LAW SCHOOLS** —*Courts lightly esteemed—Little training required of students—Elevating the profession—Degrees—Methods of instruction.*

THEOLOGICAL SEMINARIES.

An examination of the tables shows that the Presbyterians have a larger number of theological seminaries and of theological students than any other denomination—1,375 students out of the whole number, 7,658, or 17.9 per cent. But they are divided among several independent bodies. The Roman Catholics have 1,250 students, or 16.3 per cent of the whole number; the Baptists, 1,101, or 14.4 per cent; the Lutherans, 938, or 12.2 per cent; the Methodists, 924, or 12.1 per cent; Congregational, 626, or 8.2 per cent; Protestant Episcopal, 444, or 5.8 per cent; Disciples of Christ and Christians, 366, or 4.8 per cent, and other denominations 634, or 8.3 per cent.

As regards endowments, the Presbyterian seminaries are especially prosperous. Omitting Omaha Seminary (of comparatively recent establishment) and one or two missionary institutions, all of the others have good endowments. With 167 professors, they have endowment funds aggregating \$6,372,618, nearly \$40,000 to each professor. Union Seminary, at New York, and Princeton Seminary, have endowments of nearly \$100,000 to each professor. The Protestant Episcopal and Congregational schools are also heavily endowed, about \$35,000 to each professor.

It is noticeable that notwithstanding the large number of members in the Southern Baptist churches (1,280,066), they have only one theological seminary, that at Louisville, Ky. The Methodist Episcopal Church, South, with 1,209,976 members, has only one theological seminary, that at Vanderbilt University, Tennessee.

A scarcity of seminaries, however, has not prevented these denominations from enjoying a vigorous and active growth. It should be mentioned here, however, that many theological students from the Southern States attend Northern seminaries, just as do medical and collegiate students. It is worthy of note, too, that the Southern Baptist Theological Seminary at Louisville has a larger number of students than any other seminary in the United States, 268. Only five other seminaries had over 200 students, namely, Chicago Theological Seminary, McCormick Theological Seminary, Princeton Seminary, Seminary of St. Francis of Sales, Wisconsin, and Seminary of St. Sulpice, Baltimore, Md.

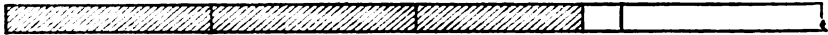
¹ By A. Erskine Miller.

DIAGRAM 1.—*Distribution of theological students in different denominations.*

Presbyterian—17.9%.



Catholic—16.3%.



Baptist—14.4%.



Lutheran—12.2%.



Methodist—12.1%.



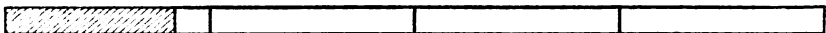
Congregational—8.2%.



Episcopal—5.8%.



Christian—4.8%.



Other—8.3%.

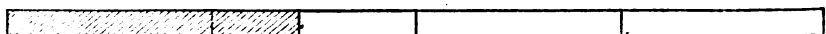


DIAGRAM 2.—*Theological students to 10,000 members.*

Congregational—12.2%.



Presbyterian—10.8%.



Episcopal—8.2%.



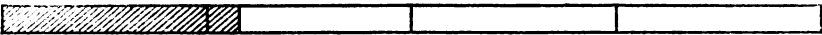
Lutheran—7.6%.



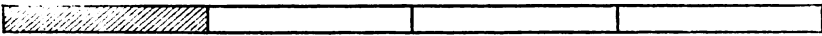
Christian—4.9%.



Other—3.6%.



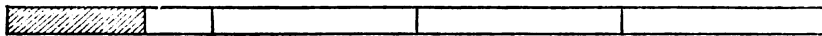
Baptist—3%.



Methodist—2%.



Catholic—2%.



AN EDUCATED MINISTRY.

To determine relatively the education of the ministry of the different denominations, it would be very erroneous to compare the whole number of theological students in one denomination with the whole number of some other. If one denomination has only half as many members as another, the number of its theological students should also be only half as large, if the ministerial education and ministerial supply be proportionately equal in the two denominations. The Baptists have 1,101 theological students, while the Congregationalists have only 626, but it should not be concluded that the Baptist ministry is therefore better educated than the Congregational, for there are about seven times as many Baptists in the United States as there are Congregationalists.

If we consider the number of members in the Congregational Church, we find that they have a larger number of theological students relatively than any other denomination, and consequently we would expect them to have the best-educated ministry. For every 10,000 members in the Congregational Church there are over 12 theological students. The Presbyterians rank second, with 11 students for every 10,000 members; the Episcopalians third, with 8 students, followed closely by the Lutherans. In the Catholic Church there are not quite 2 theological students to 10,000 members; in the Methodist Church a fraction over 2, and in the Baptist not quite 3. The above figures show more conclusively than anything else that some modifying circumstances must be taken into consideration. For instance, it is well known that the Catholic priesthood are usually well educated, although the diagram would indicate differently. Again, the ministerial supply may be much greater proportionally in one denomination than in another.

COLLEGIATE TRAINING OF THEOLOGICAL STUDENTS.

There is little doubt that taken as a whole a larger number of theological students have received a collegiate training than any other class of professional students. In the forms sent out to professional schools the question was asked, how many students had received the degree A. B. or B. S. The replies from theological schools were far more satisfactory than from any of the others. Of the 147 theological schools all answered the question except 43. Quite a number of the larger seminaries publish this information in their annual catalogues, giving name and residence of each student, the college he attended, and year of graduation, if a graduate.

In the theological schools which answered this question there were 4,699 students, and of these 2,185 had received the degree A. B. or B. S. It is probable that this is a fair and correct representation of the number in theological schools. Nearly one-half of the theological students are, therefore, graduates of colleges (46.5 per cent).

On account of the defective returns in regard to this item from the other classes of schools, it has been found impossible to compare the percentage of college graduates among theological students with those in law, medicine, etc. Of the 67 law schools no information was received from 25 schools having 3,129 students, and in some cases where the question was answered it was evidently incorrect. Judging from the returns received, only about 20 per cent of law students are college graduates. The information from medical schools was evidently so imperfect that no attempt was made to tabulate the answers.

WOMEN IN THEOLOGICAL SEMINARIES.

There are in the United States 147 distinct theological schools and departments of universities giving theological training, the students until recent years being young men in almost if not entirely all of them. But while woman has been making her way into so many new spheres of activity, and has been looking around for still other fields to conquer, her eyes have rested on the umbrageous walks in the theological

domain, where the vocation of enlisting men and women on the side of sobriety and godliness, and of pointing out to them the duty and advantages thereof, is held to be of such worth to mankind as to compensate for free education and a maintenance while receiving it. While she has been granted admission to many colleges and universities, she was not to be appeased by any annex to a theological school. As so many women are going out as missionaries to China, Japan, Egypt, and other countries, they desire some training in theological studies in order to accomplish a full measure of success. Where can they receive this training so well as in a theological school? For such reasons we find the names of women occurring quite frequently in some theological catalogues. Tufts College Divinity School had 4 women enrolled in 1893-94, Hartford Theological Seminary had 10, and at Newton Theological Institution there were 6 preparing for foreign missions.

BENEFACTIONS.

The Chicago Theological Seminary of the Congregational Church was the recipient of the largest benefaction during the year, \$470,642. Of this amount, \$180,000 was contributed by Dr. D. K. Pearsons.

The Lutheran Seminary, at Gettysburg, Pa., received \$38,710. "The real estate of the institution, consisting of a seminary building and three professors' houses, with some 20 acres of ground, is valued at \$75,000. The general endowment fund amounts to \$110,820, and the scholarship endowment to \$15,146. The library numbers over 11,000 volumes. The board of directors have taken steps for the enlargement and strengthening of the institution. As the beginning of this, a new building is in process of erection, mainly for lecture and recitation rooms, chapel, and library, the cost of which is in part provided for by a bequest of \$22,000 from the late Matthew Eichelberger, of Gettysburg. The old building is to be remodeled and renovated."

The Episcopal Theological Seminary, at Sewanee, Tenn., received \$48,000. "The generous bequest of Mrs. M. D. Tustin as a memorial to her husband, Dr. J. P. Tustin, amounts to the endowment of a professorship. In addition, the gift by a prominent Northern churchman of \$20,000, the interest of which is to be expended primarily upon the material fabric of the department, provides the means for adding many much-needed improvements, as steam heating, water supply, etc."

Mr. J. A. Alexander, of Woodford County, Ky., deeded to the Louisville Presbyterian Theological Seminary property in Chicago valued at not less than \$100,000.

Benefactions to theological schools in 1893-94.

Pacific Theological Seminary, California.....	\$13,000
Divinity School of Yale University, Connecticut.....	31,375
Catholic University of America, District of Columbia.....	35,000
Gammon Theological Seminary, Georgia.....	50,300
Chicago Theological Seminary, Illinois.....	470,642
Lutheran Seminary, Chicago, Ill.....	5,000
Augustana Theological Seminary, Illinois.....	3,500
Concordia College of Springfield, Ill.....	13,000
Wartburg Seminary of Dubuque, Iowa.....	4,566
College of the Bible, Lexington, Ky.....	6,500
Louisville Presbyterian Theological Seminary, Kentucky.....	100,000
Bangor Theological Seminary, Maine.....	6,250
Newton Theological Institution, Massachusetts.....	50,000
Luther Seminary, St. Paul, Minn.....	1,000
School of Theology, Liberty, Mo.....	2,000
German Theological School, Bloomfield, N. J.....	14,368
Hamilton Theological Seminary, New York.....	15,000
General Theological Seminary (Episcopal), New York.....	34,008
Union Theological Seminary, New York.....	25,000
Hebrew Union College, Ohio.....	25,000
St. Mary's Theological Seminary, Ohio.....	12,000
Lutheran Theological Seminary, Columbus, Ohio.....	8,000
Union Biblical Seminary, Ohio.....	8,300
Divinity School of Kenyon College, Ohio.....	18,000

Oberlin Seminary, Ohio	\$2, 000
Xenia Theological Seminary, Ohio	18, 500
Allegheny Theological Seminary, Pennsylvania	21, 121
Western Theological Seminary, Pennsylvania	14, 500
Lutheran Seminary at Gettysburg, Pa	38, 710
Meadville Theological Seminary, Pennsylvania	18, 000
Columbia Theological Seminary, South Carolina	6, 000
Southwestern Presbyterian Seminary, Tennessee	1, 500
Biblical Department of Vanderbilt University, Tennessee	2, 500
Sewanee Theological Seminary, Tennessee	48, 000
Rio Grande Congregational Training School, Texas	4, 476
Nashotah House, Wisconsin	25, 000
Total benefactions	1, 152, 116

DEGREES FROM THEOLOGICAL SCHOOLS.

In 1893 the Bureau of Education received an inquiry from a professor in a theological school as to what seminaries conferred a degree upon students completing the theological course and whether it was given by diploma. These questions were placed in the forms sent out to theological seminaries and the answers tabulated. (See tables of theological schools in another part of this volume.)

Of the 147 theological schools, a little more than one-third (51) replied that they gave a degree to students completing the course and 71 replied that they did not. Of the latter a few gave a simple certificate of completion of the course. Twenty-five did not answer the inquiry at all. All of those answering affirmatively gave the degree B. D. (bachelor of divinity) except 5 which gave S. T. B. (bachelor of sacred theology).

Of the 51 schools giving a degree upon completion of the course, 42 gave it by diploma, 3 did not, and 6 did not answer.

The Chicago Theological Seminary confers "the degree of bachelor of divinity upon college graduates who take in full the prescribed course in Hebrew and Greek, present a thesis on a prescribed theological topic, and pass the final examinations."

In answer to the inquiry what degree is bestowed upon a student completing the course, the Southern Baptist Theological Seminary says: "Full graduate Th. M., master in theology; eclectic graduate, Th. B., bachelor in theology; English graduate, Th. G., graduate in theology. Also, Th. D., doctor in theology, after an extensive graduate course."

In several schools the degree is granted only to those students who have taken A. B. or B. S. before entering the theological school.

BETTER PREACHERS

Bishop W. X. Ninde, of Detroit, Mich., says:¹

"In schools of theology emphasis is placed on scholarship. The student is stimulated to enter deeply into the scientific aspect of the subject—to give himself to the severely critical study of the Scriptures until he shall become a finished exegete, employing his enthusiasm and strength on these lines, and deferring a studious application to the more practical features of his life work till he shall become fully and solely absorbed with it. The result is that graduates from our theological schools are often well equipped as scholars, and sound and forceful as thinkers, without being essentially improved as preachers. Perhaps it is painfully evident, especially in the case of men who have interrupted their ministry to take a school course, that while their preaching has gained in literary finish, it has lost somewhat in fervor and pathos, and is really not as acceptable to the people as it formerly was. The urgent call to-day is for live and magnetic preachers—for pulpits that can draw and move the people. While poor preaching is not wholly responsible for the non-church-going habits of multitudes among us, it is undoubtedly so in part. No man

¹ Boston Zion's Herald, June 7, 1893.

will reach high success in the ministry who has not an enthusiastic love for preaching, not for the praise it will bring to himself, but as an instrument of blessing to others. No amount of learning will compensate for the lack of this. The student should be impressed from the beginning of his course to the end that the chief and dominating aim is to improve him as a preacher; that all the studies he is required to pursue are to serve this end directly or indirectly, and that if this end is not met his course for practical purposes will have proved little less than a dead failure. If theological schools have a great mission in our church it is along this line. The great need of our young ministers throughout the land is sympathetic but searching and faithful criticism, and, I should add, intelligent criticism. This they will seldom receive after they have entered upon their work. People will express their opinion by absenting themselves from church or by inattention while there, but the preacher will be tempted to attribute this to anything else rather than to his own faults. In the seminary these faults can be pointed out and corrected."

DIAGRAM 3.—*Students in professional schools.*

Medical students—21,802.



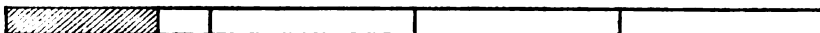
Theological—7,658.



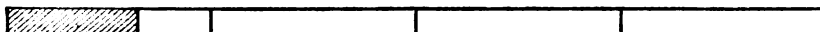
Law—7,311.



Dental—4,152.



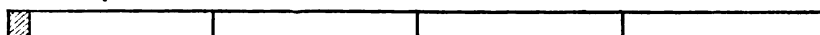
Pharmaceutical—3,658.



Nurse pupils—2,710.



Veterinary—554.



MEDICAL SCHOOLS.

INCREASED NUMBER OF STUDENTS.

The variation in the number of students of any particular class from one year to a succeeding year can not be regarded of special significance in determining the general growth, for many causes may be in operation to produce a result directly the reverse of the true one. Not only so, but the number of students from year to year will vary more or less without any special cause. To arrive at any definite conclusion, one must take the number of students for a series of years, or else take the numbers of two years sufficiently remote from each other to eliminate all minor variations. If we compare the number of students, for instance, of 1883-84 with the number in 1893-94, we can form very correct ideas of the growth. In 1883-84 the number of regular schools of medicine was 88, in 1893-94 it was 109; homeopathic schools in 1883-84, 13; in 1893-94, 19; eclectic, 9 in 1883-84, and 9 in 1893-94. Although there was a net increase during the decade of 42 in the number of medical schools, it should not be inferred that the permanent establishment of medical schools is easily accomplished, for we find that 12 schools which were in the list of 1883-84 are now defunct, while 3 others that launched their barks since that time were not able to stem the tide. It should be remembered, too, that the names of medical schools are not generally included in the list of this office until their second or third year; so that other schools that only survived a year or two may not have been included. The number of schools, however, is not of particular importance, for a struggling institution with a dozen students and with instructors whose only stipend is the name "Professor" counts for as much in making a total as an institution with a thousand students. The number of students is a far better index.

The students in regular medical schools in 1883-84 numbered 10,600; in 1893-94 they numbered 17,601, an increase of 66 per cent. Students in homeopathic schools in 1883-84 were 1,267; in 1893-94, 1,666, an increase of 31.5 per cent. The eclectic students numbered about the same at the two periods—767 in 1883-84, and 803 in 1893-94, an increase of only 4.7 per cent. The number of regular medical students increased more than twice as fast as homeopathic students, and more than fourteen times as fast as the eclectics.

If this increase in medical students continues, the question will soon be raised, What are they all to do? Where can so many find places to practice their profession?

"It is no wonder that medical men complain of hard times when competition must necessarily be so keen. We presume that a rather large percentage of American medical students fall by the wayside, or, if they graduate, fail to pursue their profession. It is at best hard to understand how 8,000 new doctors every year can earn a living. It is, in fact, becoming constantly harder for a young medical man to get a foothold. What he lacks in training at college he makes up by long waiting after he gets his degree."

The ratio of medical students to population in the United States is about twice what it is in European countries. The following statistics from the Journal of the American Medical Association, January 12, 1895, give an exhibit of different countries:

"United Kingdom (Great Britain and Ireland), 8,696 total registered medical students between 1889 and 1893; for the year 1893, based on yearly accretions, 7,000; population, 37,000,000.

"France, total number medical students inscribed on the books of the Paris Faculty of Medicine for 1894, 5,144; population, 40,000,000.

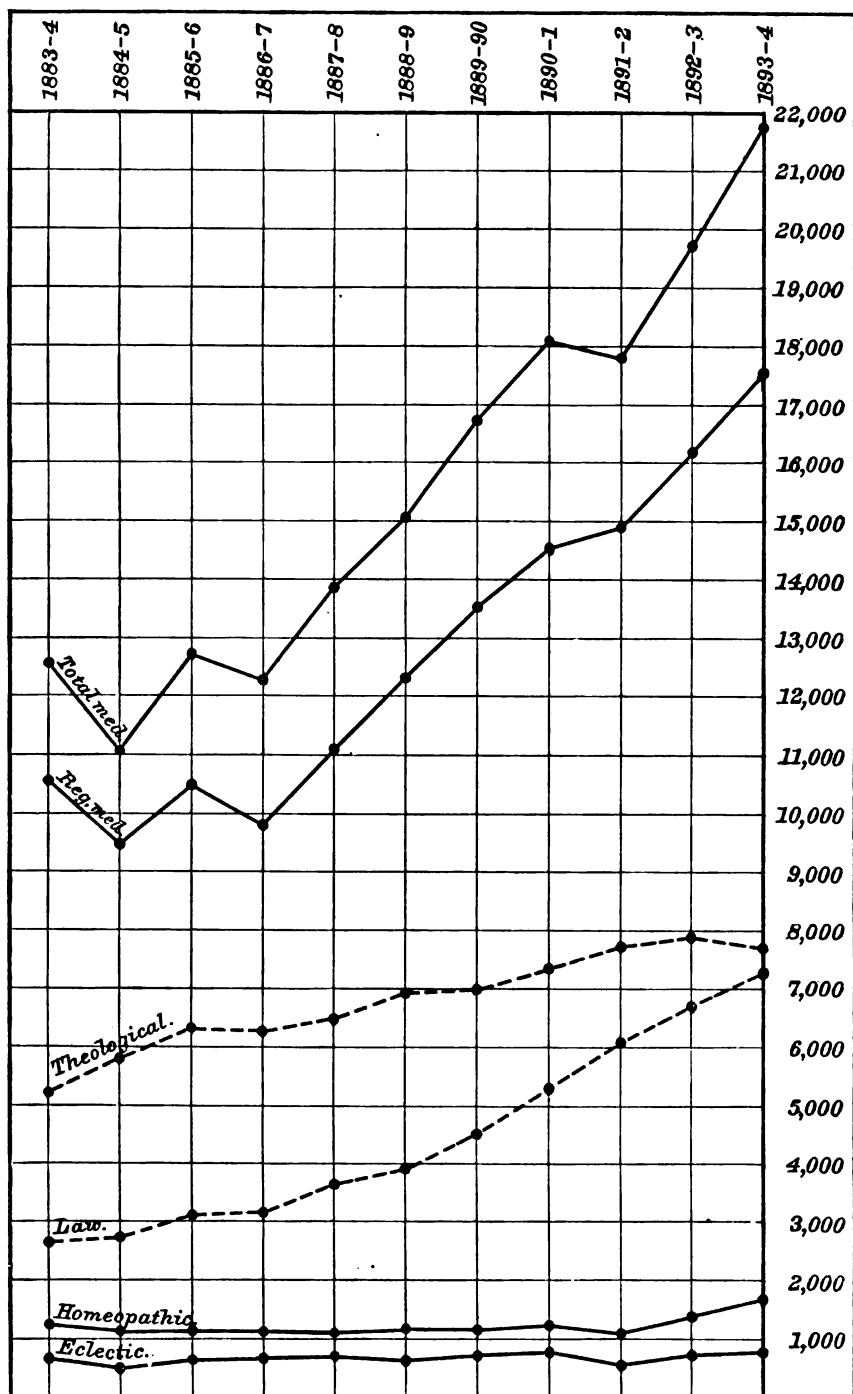
"Germany, total number medical students registered for 1894, 8,684; population, 50,000,000.

"United States and Canada, total number medical students in attendance in 1894, 20,800;² population, 70,000,000.

¹ Pacific Medical Journal.

² This was below the actual number; in the United States alone there were 21,802.

DIAGRAM 4.—Showing variation in number of professional students.



"Proportions: In the United Kingdom, 1 medical student to 5,286 of population; in France, 1 to 7,776 of population; in Germany, 1 to 5,757 of population; in the United States and Canada, 1 to 3,365 of population."

If these figures were even only approximately correct, the medical profession is sure to be even more crowded than it is at present, and it has been found that raising the standard both for entrance and graduation has not diminished the actual number in attendance, however many it may have kept out. But the question may be asked, Is it, after all, surprising that the medical profession is crowded? What profession or trade is there which is not crowded? And is it not but natural that the professions here have larger numbers in proportion to population than in European countries? The common schools and public high schools are educating large numbers of young men who have aspirations for the higher callings, and a larger number of parents in this country can gratify such desires than would be possible in densely populated Europe. Nor would it be a credit to American youths if, after enjoying a high-school education or even a full common-school education, they should be content to engage in work calling for no thought. While digging out coal or iron is honorable work, and the industrious and honest miner deserves every respect, it is nevertheless true that if a young man contents himself with this work, who has received good home training and has enjoyed the privilege of completing a full course in a common school and a public high school, and who is able to discharge successfully the duties of positions of trust and responsibility requiring good educational qualifications, he falls far short of filling the place for which he was prepared; he makes a poor recompense for the care, attention, and expense which were bestowed upon him; while his work is honorable, he deserves dishonor. Young men who have enjoyed good educational advantages know that they must make proper use of them, and as so many in this country receive such training it is not surprising that candidates for professional life are numerous.

But it need not be expected that all young men who can pass the final examination in medical colleges and the State examinations will have those other qualifications—perseverance, fortitude, etc.—which must be exercised so largely in attaining practical success in medicine. Some competitors must fall by the way. The law of the survival of the fittest must hold in medicine as in other pursuits. Large numbers of young men, after graduation in medicine, find openings in other lines which yield an immediate income, and others find that while the study of medicine is pleasant, to them the practice of it is very different.

SCHOOLS OF MEDICINE.

In the statistical tables of 1893-94 there are in all 152 medical schools; 109 regular, 19 homeopathic, 9 eclectic, 3 physiomedical, 2 preparatory, and 10 graduate. Omitting the preparatory and graduate schools, which are nonscholastic, there are in the regular schools 17,601 students—about 87 per cent of the whole number. In the eclectic, homeopathic, and physiomedical schools there are 2,561—about 13 per cent.

What are the distinguishing features of these schools? How does an eclectic or homeopathic school differ from others? What is physiomedicalism? Perhaps the briefest and best way to get a correct idea of these schools is to refer to the new Century Dictionary:

"Eclectic medicine is a medical theory and practice based upon selection of what is esteemed best in all systems;" they "make use of what they regard as specific remedies, largely or chiefly botanical."

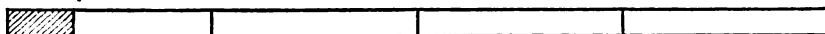
"Homeopathy—the medical treatment of diseased conditions of the body by the administration of drugs which are capable of exciting in healthy persons symptoms closely similar to those of the morbid condition treated. In practice, homeopathy is associated with the system of administering drugs in very small, often infinitesimal, doses."

DIAGRAM 5.—*Students in the schools of medicine.*

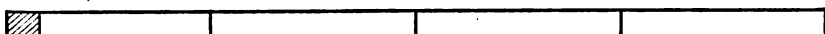
Students in the regular medical schools, 17,601.



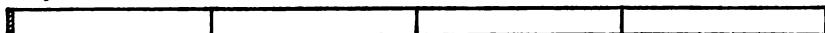
Homeopathic 1,666.



Eclectic, 803.



Physiomedical, 92.



Physiomedicalist.—"An adherent or practitioner of that school of medicine which, in its treatment of disease, uses only botanic remedies, discarding those which are poisonous."

The above descriptions give a clear and concise idea of the three schools of medicine mentioned. What, then, is the distinctive theory or practice of the regular physicians? Their distinctive feature is that they hold to no distinctive doctrine or practice. In fact, they disclaim being a school of medicine. While they are sometimes designated as allopathic by followers of other schools of medicine, they disclaim the appellation entirely. In the cure of disease they make use of any remedy, botanical or other, similar or dissimilar, which they consider best for the purpose, and whether the dose is to be large or small, is determined in the same way, while the three special schools administer drugs in small doses and use medicines not disagreeable to taste or smell.

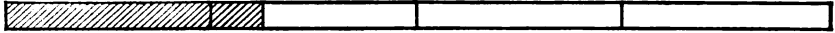
However much the schools of medicine may differ in their systems of therapeutics, there will probably not be as much difference as between the treatment in vogue in one decade and that of a quarter of a century succeeding in the same school. What to-day is to be believed is to-morrow cast aside. Works on medical practice published forty years ago, however well preserved, are useful now only as indexes of former treatment. Medical libraries can not be handed down from father to son as valuable inheritances. A cheap cloth binding is sufficient for almost any work on medical practice in a private library, for when the covering wears out the contents

DIAGRAM 6.—*Per cent of increase in the number of medical students from 1883-84 to 1893-94.*

In regular schools, 66%.



Homeopathic, 31.5%.



Eclectic, 4.7%.



will be antiquated. Phlebotomy was once so extensively practiced that medical journals took the name "The Lancet." Now the treatment is directly opposite; instead of venesection and denying the patient food and water, we must strengthen the vital powers, give all nourishment that can be properly digested, help the patient overcome disease.

Mercury was early recognized as such a valuable remedy that it became the physician's *vade mecum*, but its strongest friends were its worst enemies. They found it useful in every disease, and heroic doses were most efficacious; its dangers were overlooked or minimized in the mind of the administrator. But someone is always ready to take the other side of the question. They published abroad the danger in its use (and of course there is danger in its indiscriminate use), and pointed so effectively to the evils wrought by it in some cases that public opinion rebelled against it entirely, and physicians were often compelled to desist from its use when really needed. The pendulum swings backward and forward, and when reaching one extreme its own weight makes it to rebound. New remedies are constantly being introduced and hailed as deliverers from disease, but are soon forgotten like their predecessors.

The elixir of life has inspired hope and buoyancy in the old and enfeebled, but laurels are still in waiting for him who shall find it. The fountain of youth, like the rainbow in the sky, is ever just beyond our reach. No complaint need be made that human beings are subjected to false systems of therapeutics in any school, when in less than twenty years all of the present methods may be discarded.

SPECIAL MEDICAL COURSES.

In a few universities there is a course designed to be preparatory to regular medical work and taking the place of the first year medical course. In some other institutions a course is provided for post-graduate medical work. The course preparatory to medicine includes subjects usually taught during the first year in medical colleges having graded courses of three or four years—chemistry, anatomy, physiology, botany, and materia medica.

In the University of Kansas there is a preparatory medical course to which any student can be admitted who is prepared for entrance to the freshman class of the school of arts in all English studies. There are two terms of twenty weeks each. Students completing the work are admitted to the second year's course in any of the

larger medical colleges. During the year 1894 property to the value of \$100,000 was given for the development of the medical department.

In Brown University, Rhode Island, a course of studies has been selected as suitable for students preparing for the medical profession.

Randolph Macon College, Virginia, and Nebraska State University also have courses preparatory to medicine.

Clark University, Worcester, Mass., has a department where graduates in medicine and college graduates can pursue the study of the purely scientific branches of medicine, as chemistry, biology, psychology, and anthropology. The department affords no opportunities for dissection or hospital work, and does not confer the degree of M. D.

"The most important part of our work is research, and we wish soon to be ready to be chiefly judged by the value of our contributions to the sum of human knowledge."

In the University of Pennsylvania the "auxiliary faculty of medicine supplements the customary course of medical instruction by lectures on branches of science essential to the thorough education of the physician. The course is essentially post-graduate. There can be no matriculation by medical students until the student has entered upon his second year of medical study."

"A student in the auxiliary department of medicine who is a baccalaureate graduate in arts or science of this university or of an American college whose degrees are accepted by this university as equivalent to its own may become a candidate for the degree of doctor of philosophy on fulfilling certain requirements prescribed by the faculty of philosophy of the university. He may choose his three required subjects from the following studies: Botany, zoology, geology, mineralogy, and bacteriological hygiene."

It is not claimed that the above enumeration of universities with preparatory courses is an exhaustive one by any means, for at present rate of progress it will soon be impossible to find any university without a course of studies leading to medicine, for it is generally conceded that while medical courses should occupy about four years, young men should be able to enter the practice of medicine at an earlier age than 28 or 30.

NO HOMEOPATHY IN THE SOUTH.

It is noticeable that if we omit one or two border States, there are no homeopathic students in the South. In the North Atlantic States there are 595 homeopathic students; in the North Central there are 958; but in the South Atlantic and South Central combined there are only 61, and these are in the border cities, Baltimore, Washington, and Louisville, Ky.

It will be seen, too, by reference to the diagram giving the growth of the homeopathic, eclectic, and regular schools, that the homeopathic schools are not keeping up even relatively with the general growth in the United States at large, so far as numbers are concerned, and that the eclectics are still further behind. Unless it be that a larger number of graduates from regular schools than from homeopathic or eclectic fail to enter upon the practice of their profession or else abandon it afterwards, it would seem that homeopathy and eclecticism will gradually become less noticeable, unless further strengthened and developed by their freedom from the "shotgun prescriptions" and horrible mixtures suitable only for a person without a sense of taste or smell, but which were so frequently prescribed a few decades ago.

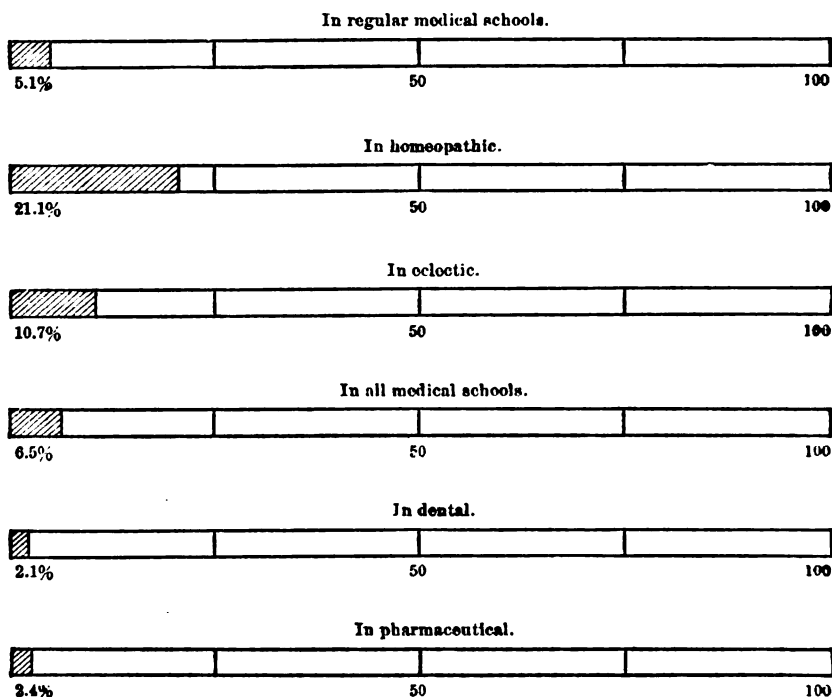
WOMEN IN MEDICAL SCHOOLS.

There are always quite a number of women engaged in the study of medicine. Most of these probably enter upon a general practice, while others seek a practice specially among women and children. Judging from the enrollment of women students, homeopathy and eclecticism seem to be more popular with them than with men. While there are nearly three times as many women students in the regular schools

as there are in the homeopathic, the ratio to male students is much smaller. In the regular schools the number of women is 902, which is only 5.1 per cent of the whole number; but in the homeopathic schools there are 351, or 21.1 per cent of the whole number; while in the eclectic schools there are 86, or 10.7 per cent. In all the medical schools there are 1,419 women, or 6.5 per cent of the whole number.

In dentistry, pharmacy, and law the number of women is much smaller; dentistry, 88, or 2.1 per cent; pharmacy, 88, or 2.4 per cent; and law, 54, or seven-tenths of 1 per cent.

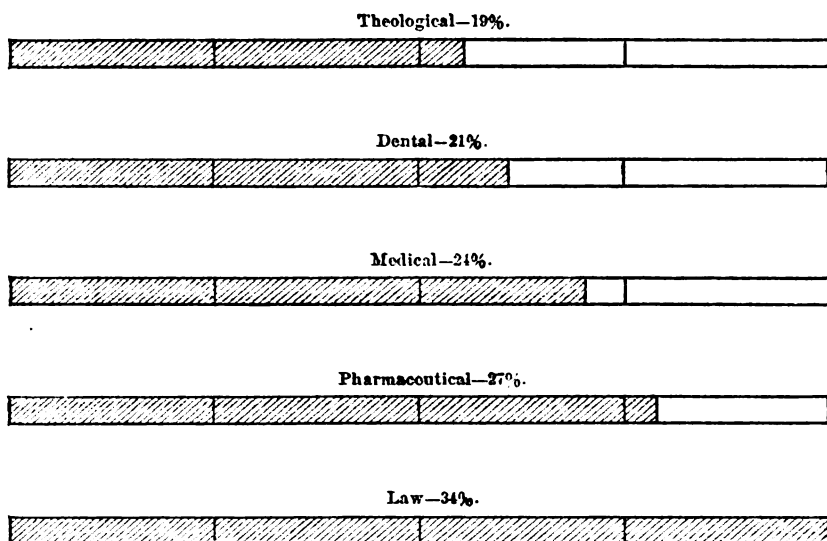
DIAGRAM 7.—*Proportion of women in medical schools in 1893-94.*



PERCENTAGE OF STUDENTS GRADUATING.

A diagram has been made to show what proportion of the whole number of students in law, medicine, theology, dentistry, and pharmacy were allowed to graduate at the end of the year; in other words, to show approximately what amount of preparation is required of students in each of these pursuits before they are considered qualified to enter upon their work.

Judging from the results there given and from the usages followed in these vocations, it is concluded that, on the whole, medical students at the present time are required to have a better preliminary training, are required to spend a longer time in the study of their profession, and must undergo severer final examinations than students in the other professions, law, theology, dentistry, and pharmacy. If we take these elements of preparation singly, the result might be different; for instance, it might be claimed that law students begin the study of law with better education than medical students; but when we consider all three of the items mentioned, it will be found that the result is probably as stated, namely, that medical students are required to make better preparation for their work than any other class of students. This was not the case only a few years ago.

DIAGRAM 8.—*Proportion of students graduating.*

The proportion of law students graduating at the end of the year was 34 per cent, a larger percentage than in any of the other classes. This was probably the result of the short course in law schools, 7 law schools requiring but one year of study before graduation, 47 requiring two years, and only 13 requiring three years, while of the 152 medical schools only 3 have courses of two years, the others having three years, except 19 schools, which have courses of four years. Large numbers of law students serve as clerks for a few months in the office of some attorney, are admitted to the practice of law, and then devote their leisure time to real preparation for their profession.

Of students in pharmacy, 27 per cent completed the course at the end of the year, and of dental students 21 per cent. While these percentages show that students must devote considerable time to preparation in these callings, it is well known that many licensed druggists never attend a school of pharmacy at all, and the requirements of dental practitioners are also lax.

In theology, of the 7,658 students only 19 per cent completed the course during the year, while of the 21,802 students in medicine 24 per cent graduated at the end of the year. The course in theological schools, too, is usually three years, while several schools have courses of four years. It is evident, therefore, that students in the theological seminaries receive full preparation for their work.

But why is it that with about one-fourth more physicians than clergymen in the United States there are about three times as many students of medicine as there are theological? And why is it that while one denomination may have four times as many members as another, the number of theological students in the two denominations is about the same? It is evidently because a large number of ministers never attend a regular seminary course at all, but receive only private instruction from some clerical brother, or else jump full-fledged from some other calling into the ministerial ranks. This is well known to be true, especially in some important denominations.

If we consider the interests involved, it would seem to be only proper that the education of physicians should rank especially high. While the legal profession frequently consider questions involving large estates or large funds, these can not

be considered so important as those cases where health and life are at stake, and to secure which surrender of every possession would willingly be made.

It seems also that the physician needs a better preparation for his work than the theological student, although the latter will aim to direct the spiritual welfare of his fellow-men, a calling which of course ranks in importance above all others. But in order that one may succeed in turning men from ways of vice and wickedness to godliness and heliness, it is not so necessary that he shall have unraveled all the nice distinctions of doctrine which set up one denomination against another, and which cause much waste of effort, but it is very important that the teacher of righteousness shall himself be righteous, and that he be able to illustrate his precepts by his example. The history of early Methodism is convincing proof of what can be accomplished by earnest, consecrated workers, with but little previous training for the work. Many of those who have received full theological instruction are themselves opposed to a strict requirement of a long theological course under all circumstances.

In the study of medicine the previous instruction of even a well-educated person gives him but little knowledge of those things which he must learn before beginning a practice of medicine. His previous training will simply enable him to grasp more quickly and fully the new ideas presented, and accelerate his progress along paths untrodden by him before. It is therefore absolutely necessary not only that he be capable of properly receiving instruction, but that he also devote much time to receiving it, and that he give clear evidence of his medical knowledge before receiving a license.

NURSE TRAINING.

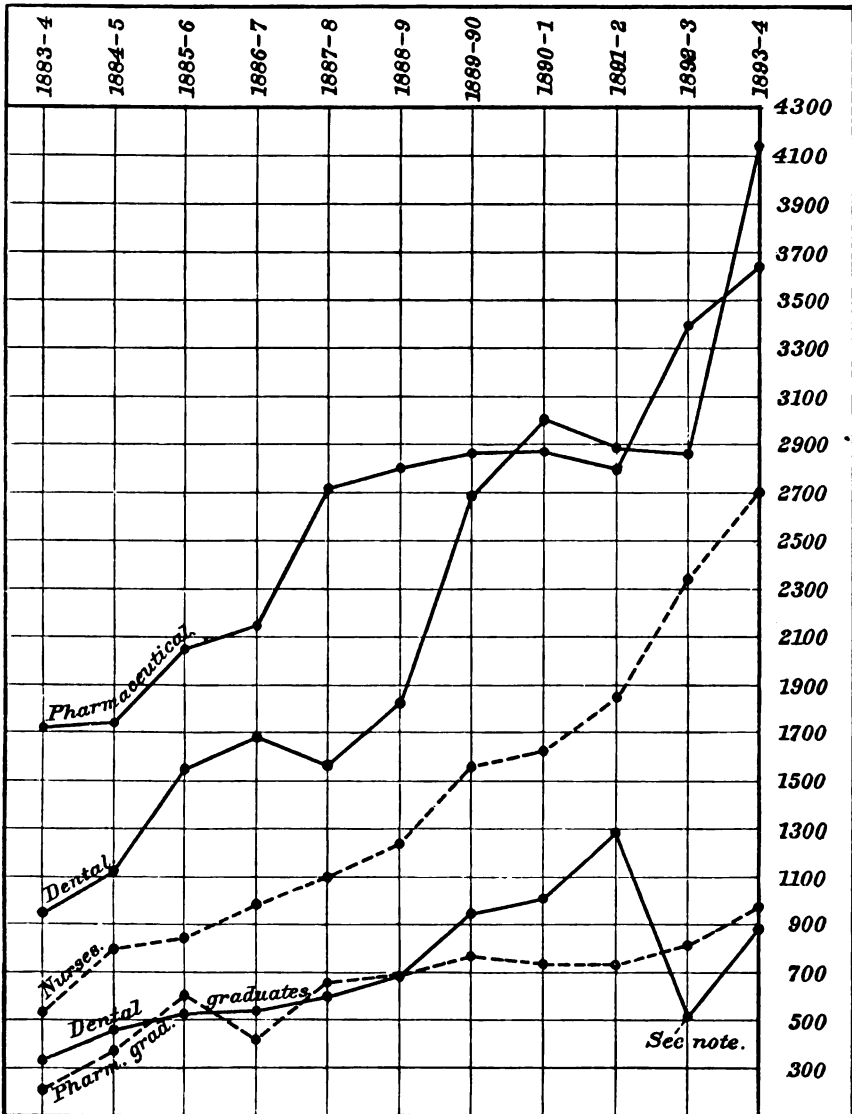
The nurse-training table mentions the names of 66 schools, with 2,710 nurses receiving instruction. The number of instructors was not given in the table for several reasons. In the first place, in answer to the question as to the number of instructors, quite a number of schools invariably reply, "Instruction is given by the hospital staff of physicians and surgeons." Some schools mention only four or five instructors who deliver special lectures regularly to the nurses as to their duties, omitting entirely the regular hospital staff. Another school will probably give the number of the entire staff in two or three hospitals where the nurses serve. As a result one school will be reported as having 5 instructors and another as having 150, while in reality they may have about the same number. It is doubtful which can be said to have reported correctly, the school giving only the number of actual lecturers on nursing, or the school which included every member of the hospital staff. In reality the nurse receives the larger and more important part of her training in the hospital ward, where she constantly gets many gentle hints as to what she should do, and where she learns to know by doing. In the operating room she sees an amputation made by a skillful surgeon assisted by the resident physicians and nurses. In the fever ward she sees the physician examining the typhoid patient, note the pulse, take the temperature, and give a cold bath. In the afternoon she hears a lecture to the nurses on the condition of the skin. How many instructors were there? Fifteen, three, or one, or nineteen? Evidently none of these answers would be correct. Her instruction could no more be determined in that way than by the number of windows to the ward.

The first regular and systematic instruction in nurse training in this country is said to have been given in 1873, although some efforts to establish such schools were made previous to that time. In the annual report of the Bureau of Education for 1874 only two nurse-training schools were mentioned, the Bellevue Hospital Nurse-Training School and the one at New Haven, Conn. These schools found much difficulty in securing candidates for instruction who possessed good health and sufficient education. The secretary of the New York Association, in his report for 1874, said:

"We were at first disappointed at the few desirable applicants who presented themselves to be trained, but as the knowledge of our school gradually spread over

the country we received, either through personal interview with the superintendent or by letter, many applications from women offering themselves as probationists. Some were entirely unfitted by incapacity, physical weakness, or because, belonging to the ignorant and uneducated class, they fell below our standard of admission.

DIAGRAM 9.—Showing nurses and students and graduates in dentistry and pharmacy, 1883-1894.



NOTE.—Course of three years first required.

But the majority were unwilling to devote two years to gaining a career, seeming to care little for really perfecting themselves in their profession.

"The scarcity of such professionally trained nurses throughout the country was perceived in the effort to find women capable of acting as head nurses. Advertisements,

applications to doctors, and in fact all available means only brought us four, one of whom we were soon forced to discharge for inefficiency."

At the present time, however, there is no scarcity of applicants wherever schools have been established long enough to make known the value of such service. Whenever a number of nurses, possessing a full English education, so that they are entirely competent to receive instruction and to adopt it in practice, have once found employment in any city, the great value of their service is at once recognized, and thereafter they are always in demand in case of sickness. It is soon found that their value does not consist at all in the amount of menial service which they perform, this being incidental and expletive, but that they render valuable professional service of the same kind that the medical attendant bestows, differing only in degree. The value of the trained nurse increases just in proportion to her ability to acquire this professional knowledge, and decreases just as her measure of usefulness depends only on the amount of menial work she discharges.

Her work, however, does not conflict with that of the physician, but supplements it. As a rule, the more competent and better educated the nurse, the more friendly and congenial will be her relations with the physician, for even if their ideas of proper treatment should differ, the well-educated nurse will always remember that she is merely to assist the physician and carry out his directions, and not to conduct the case, and if she should consider it advisable to make any suggestion to the physician, it would be done at a time and in a manner not objectionable. An ignorant woman as nurse, and with only the little training such an one can receive, might easily imagine she understood the whole case, and would be liable to discharge for impertinent interference.

As the successful physician usually has a number of patients to visit and as he must have time to study up current medical literature, without doing which he would soon lose both professional knowledge and interest and consequently professional standing, he must necessarily confine his visits to each patient to a short length of time, simply ascertaining the condition of the patient and making the necessary prescriptions. He then intrusts the patient to the nurse until his next visit. The skillful nurse administers the medicine or performs any other duty which the physician may have directed, notes the progress of the case, the pulse, respiration, condition of the skin, and nervous symptoms, and if she discovers any special change for the worse, and it is particularly important that she be able to recognize any change, sends immediately for the physician again, to whom she is able to give a minute and accurate account of the course during the interval. He is then able to diagnose the condition at once and without doubt, directs the proper treatment, and the patient is soon convalescent, and the physician's reputation is again strengthened instead of being clouded by a death; the patient and her friends bear many feelings of gratitude and kindness to the nurse, upon whose careful attention and good judgment they have depended in the intervals of the physician's visits, and to the physician who has given wise and skillful treatment and who recognizes the valuable assistance he has received.

"Schools for training nurses have done much to make clear the evils of untrained nursing. Intelligent people see that the best results are to be expected only when the directions of the trusted physician are implicitly followed, and that the modern treatment of disease demands the continuous, thoughtful attention of a trained expert. The intelligent family is no longer content to trust a fight, whose loss means saddest bereavement and years of hidden pain, to the sole direction of a commander who is on the field of battle only half an hour in the twenty-four. He must have a lieutenant, an executive officer who will see his orders carried out, who will call him to the spot if an emergency arises, and who can be trusted to act wisely in those crises where the right thing must be done at once.

"There are now, happily, many who know by experience the relief given and the confidence inspired by the presence of a trained nurse at the bedside. But it is the doctor who can best bear witness to her usefulness. No one but a physician can

appreciate the odds against recovery when the severely ill are left to the tender but awkward mercies of their own flesh and blood. It is not too much to say that the treatment of typhoid fever, of a severe pneumonia, of a dozen other maladies, in a private house without a trained nurse is a calamity. At the best it is giving the enemy a long start." (An. Rep. St. Louis Training School for Nurses, 1894.)

EDUCATION AND GOOD HOME TRAINING NECESSARY.

Although it is well for the nurse to be in good health, it is not absolutely necessary that she be of a strong and robust constitution. It is far more important that she have received at least a full English education, and that she have some knowledge of the proprieties and amenities of social life. Without a good English education it would be impossible to appreciate the necessary instruction, and it can easily be conceived how injurious to the sick, in some instances, would be the abrupt and blunt expressions of a nurse with no delicacy of feeling, and how unwelcome would be such a person in a home of comfort and refinement, where the service of a trained nurse is most frequently demanded, and where she must necessarily come in contact with members of the family.

In communities where trained nurses have not been generally employed, the esteem in which their service is held when introduced, and the demand for such service, depend to a large extent upon whether the nurses first employed are well qualified for their work. If they have had good preliminary training and have been thoroughly instructed in the strictly professional details of their work, and especially if their usefulness is observed by the medical profession, the value of their service soon becomes known and the demand for trained nurses at once arises. But if nurses of inferior education and knowledge are introduced, they will rightly be considered of no more worth than industrious and careful servants. It is very important that officers having charge of the selection of candidates for positions in nurse training, especially in communities where they are just being introduced, exercise great care to accept only those who have good educational qualifications and have received good home training, and nurses should not be sent out into private families until they have received a full course of complete and systematic instruction.

THE MODEL TRAINING SCHOOL.

A majority of nurse-training schools are found in the large cities, in connection with the hospitals. In fact, proper instruction and practical experience can not be obtained elsewhere, except under many disadvantages. There are a few training schools where the students attend lectures and clinics just as medical students do, and pay a regular tuition fee, and receive some training in nursing private patients and in attendance upon free obstetrical cases. Such students are relieved from some of the disagreeable work of large hospitals, but it involves the loss of much valuable practical information, and it is doubtful whether they can ever become as skillful and efficient nurses as those who have served an apprenticeship in a hospital ward. The model training school seems to be one where the pupils serve as nurses in a large hospital where medical, surgical, and obstetrical cases are treated; where they receive regular instruction in anatomy, physiology, and obstetrics by lectures and recitations, with occasional examination on the instruction given; where the pupils reside in a nurses' home near to their place of work, but at the same time separate and distinct from the hospital, so that they have some change of scene and are not constantly in contact with the sick and afflicted, in whose presence mirth and gaiety would be both unseemly and difficult. Many of the larger schools have the arrangement here mentioned, except that but few hospitals can give the threefold instruction—medical, surgical, and obstetrical.

The New York City Training School for Nurses has a Nurses' Home on the south point of Blackwell's Island, from which the nurses go out daily or nightly to one of four different hospitals, the City, Maternity, Gouverneur, or Harlem hospitals. Each

of these hospitals has its own medical board, its own methods of nurse training, and a distinctive class of patients, so that pupils receive instruction in the nursing of patients with all kinds of diseases and injuries. The school has about 75 pupils, 4 supervising nurses, a superintendent, and an assistant superintendent. It received during the year 1893-94 400 applications for places as nurse pupils, accepted 40 as probationers, dropped 7 nurses from its roll for various reasons, and graduated 22. During the first six months the nurses are placed in the City Hospital, where there are large wards and many chronic cases, and where there are supervising and assistant supervising nurses to instruct them. Here they become acquainted with hospital life and learn the first principles of nursing. The nurse "may now be called upon to enter upon the duties of the maternity service, where, under the immediate charge of the supervising nurse of Maternity Hospital, she will gain experience peculiar to that service. Here, too, she will have charge of a small ward and learn something of hospital management.

"The Gouverneur and Harlem hospitals, situated in the northern and southern portions of the city, are emergency and reception hospitals. Two ambulances at each of these hospitals are constantly bringing in sick and wounded from the surrounding neighborhood, and here the nurses come in contact with a new order of things. To these hospitals the nurses are sent in their second year, and when they are well on in their senior course. Here again the system of graded responsibility in the management of the nursing is carried out, the supervising nurse responsible for all, the head nurse under her having charge of the operating room and the practical training of the nurses, the senior nurse and staff filling in their respective places. The six months a nurse spends in these hospitals give her experience in nursing all kinds of acute medical and surgical cases and in dealing with the emergencies which these hospitals continuously supply.

"The last six months of a nurse's time in the school are spent acting as head nurse in the large wards in City Hospital, in filling the position of head nurse in the Maternity, Gouverneur, or Harlem hospitals, or in taking care of operation cases where experienced nursing is specially required.

"The course of training thus pursued insures a thorough training in method, order, accuracy, and attention to detail principally gained during the first year in City Hospital; while during the second year the service in the outlying hospitals develops self-reliance, self-control, adaptability, quickness of observation, and gives a knowledge of the higher responsibilities of nursing.

"The Nurses' Home, which may be considered the heart of this system, is situated pleasantly on the south point of the island. Here the nurses reside, and go daily or nightly, as the case may be, to the hospitals where they are stationed on duty, and here they rest during the evening and when they have their weekly half day or second Sunday. The social ties here formed are one of the pleasant features of the school. Since its enlargement last year, the 'Home' has a capacity of forty-five bedrooms, four bathrooms, two dining rooms, two storerooms, cloakroom, linen room, trunk room, kitchen, and two pantries. It also has a large library or parlor, a class room, a study, and a private sitting room. We find the Home a very pleasant place to live in, situated as it is in its own grounds and removed from all immediate hospital surroundings."

WAGES OF NURSES.

As will be seen by an examination of the table of nurse-training schools,¹ the wages of nurses during their years of service are, during the first year, about \$8 or \$10 per month; during the second year, \$12 to \$14 per month—board and lodging always being furnished free. After graduation, when in attendance upon cases of sickness in private families, they usually receive \$2.50 to \$3.00 per day, or \$15 to \$25

¹ The table giving statistics of nurse schools can be found in latter part of this volume.

per week, in addition to board and lodging. They are usually employed in homes of people of refinement and some means, and as might be expected in such cases, especially under circumstances of serious illness, they are treated with much kindness and courtesy. As to whether they can obtain work regularly depends to a large extent upon energy and efficiency, especially as recognized by members of the medical profession. The best nurses usually find all the work they desire.

The great usefulness of well-trained nurses can not be doubted for a moment when an examination is made of the course of training which they receive, involving in almost every school two years of careful and attentive work. The course is practically the same in all the schools, but some schools have much better facilities than others for giving instruction, and are more rigid in their requirements, and some now require courses of three years.

COURSE OF TRAINING.

The instruction includes:

1. The dressing of blisters, burns, sores, and wounds, the application of fomentations, poultices, cups, and leeches.
2. The administration of enemias and the use of the female catheter.
3. The management of appliances for uterine complaints.
4. The best method of friction to the body and extremities.
5. The management of helpless patients; making beds, moving, changing, giving baths in bed, preventing and dressing bedsores, and managing positions.
6. Bandaging, making bandages and rollers, luing of splints.
7. The preparing, cooking, and serving of delicacies for the sick.

The nurses will also be given instruction in the best practical methods of supplying fresh air, and of warming and ventilating sick rooms in a proper manner. They will be taught to take care of rooms and wards; to keep all utensils perfectly clean and disinfected; to make accurate observations and reports to the physician of the state of the secretions, expectorations, pulse, skin, appetite, temperature of the body, intelligence, as to delirium or stupor, breathing, sleep, condition of wounds, eruptions, formation of matter, effect of diet, or of stimulants, or of medicines; and to learn the management of convalescents.

The teaching will be given by physicians and surgeons, when practicable, at the bedside of the patients, and by the superintendent and head nurses. Lectures, recitations, and demonstrations will take place from time to time, and examinations at stated periods.

When the full term of two years is ended, the nurses thus trained will be at liberty to choose their own field of labor, whether in hospitals, in private families, or in district nursing among the poor. On leaving the school they will each, having passed an examination, receive a diploma under the seal of the hospital.

In addition to the practical experience obtained in the wards, there is a regular course of study, embracing the following subjects:

Anatomy, physiology, obstetrics, the nature and course of various diseases, the action and doses of those medicines in general use.

Monthly written examinations will be held by the superintendent, and the general standing of each pupil nurse recorded.

Diplomas will be granted to those nurses only who obtain a final rating of 75 per cent or over, this rating being fixed by the final examination and by the superintendent's record kept during the two years' course.

LIST OF LECTURES AND SUBJECTS.

A lecture is given to the training school, by a member of the medical or surgical staff, once a week between September 15 and June 15. The following are among the lectures given:

Five. Surgical dressings: poultices, washes, fomentations, bandaging, splints, leeches and blisters, enemias, surgical hemorrhage, etc.

Three. Theory of wounds: modes of healing, granulations, ulcers, cellulitis, supuration, abscesses, erysipelas, pyæmia, gangrene, sepsis, etc.

Three. Bacteriology, brief history and general theory: micro-organisms, general distribution in air, water, etc.; elementary consideration of pathogenic and non-pathogenic micro-organisms; exhibition of apparatus and cultures; practical points for nurses.

Two. Theory of sepsis: aseptic treatment, different methods; dressings, with demonstrations and "quiz drill."

Two. Emergencies: hemorrhage, burns, sunstroke, fits or seizures, drowning, fractures, immediate treatment of wounds and injuries, foreign bodies in eye, nose, and ear; poisons, domestic emergencies, and practice of expedients.

Two. Surgical anatomy and landmarks, hemorrhages, etc.

One. Surgical operations: care of patient before, during, and after operations; anesthesia and recovery; accidents, hemorrhage, shock, especially as in private nursing.

One. Abdominal surgery: including ovariectomy, herniotomy, operations for abdominal injuries, etc.

One. Fractures: varieties; preparation and care of splints and apparatus for treatment; management of cases, etc.

Three. Medicines: avenues of taking; preparation and doses; classes of internal and external poisons; cautions; hospital formulæ.

One. Nursing in fevers: theory of fever, symptoms and course of, different plans of treatment, nurses' duties as to symptoms, bed, clothing, secretions, baths, food, and management of cases.

Two. Eruptive fevers, especially diphtheria and scarlet fever: symptoms and course of disease; complications; infection and contagion; management of patient, and surroundings; personal hygiene of nurse in attendance, etc.

Two. Symptomatology in disease: what and how to observe accurately; vital organs and special symptoms. The model sick room: temperature, light, ventilation, care of bed, bedding, and clothing; furniture, utensils, disinfectants, cleansing, dusting, etc.

One. Contagious fevers and epidemics: prevention of contagion; disinfection, care of habitation, etc.

Three. Care of children in health and disease: diet and clothing of infants and children; various infantile diseases.

Two. Physiology of pregnancy and labor: delivery, confinement nursing.

One. On gynecological nursing: preparation of patient for examination or operation; operations after treatment, douches, use of catheter, etc. (Demonstrations to sections of senior nurses.)

One. Special nursing in nervous diseases, including the insane.

Two. Special nursing in skin diseases and syphilis in the infant and adult.

One. Special nursing in diseases of the eye. Anatomy and physiology of the eye, and general care in health and disease.

One. Special nursing in diseases of the ear, its care in health and disease; nurses' duties at operations and continued treatment in disease.

One. Special nursing in croup, laryngitis, tracheotomy, intubation, etc.

One. Urine: characteristics, properties, including taking notes on same, and brief analysis. Drill in laboratory by classes in sections.

One. Massage: its history, theory, and modes of application.

Two. Visceral anatomy: demonstrations by post-mortems; care of the dead, etc.

LAW SCHOOLS.

The table giving the statistics of law schools includes the names of 67 schools, and there were 2 others from which information was not received in time for tabulation, namely, the law school of the American Temperance University, Harriman,

Tenn. (opened January 22, 1894), and the law school of Indiana Central Normal College.

According to President Henry Wade Rogers, of Evanston, Ill., "Harvard is the oldest of existing law schools in this country. It has made its way slowly. Founded in 1817, the largest number of students it had before 1829 was 18, and its average attendance at that time had been 8. The Yale Law School was established in 1824, and that of the University of Virginia in 1825. The Cincinnati Law School was established in 1833 by lawyers who had been educated at the Litchfield school. It was the first law school established west of the Alleghany Mountains."

The number of students enrolled in 1893-94 in the 67 law schools tabulated was 7,311, an increase of 533 over the enrollment in 1892-93. The number graduating was 2,454, an increase of 54. In the city of New York there were 1,186 students of law; in Washington, D. C., there were 739.


Although we hear much now and then of the right of women to practice law in different States, they do not seem to be fast availing themselves of their opportunities. Of the 7,311 students of law registered in 1893-94, only 54 were women. And it seems that many of those who study law do not practice it afterwards, for by the census of 1890 there were only 208 women classed among lawyers.

Although law schools are helping greatly in raising the standard of legal education in the United States, especially among the younger members of the profession, there still remains much to be done. Hundreds of young men are being admitted to the bar in the various States, many of whom can never become properly qualified on account of lack of elementary education, to say nothing of the large number who expect to qualify themselves in law after admission to the bar. The legal profession must learn a lesson from what the medical associations did a few years ago, when the standard of medical education was elevated so materially.

While some States have regulations sufficiently restrictive to shut out the incompetent and unprepared, in other States there are practically no restrictions. The constitution of Indiana expressly states that any man can practice law who is a voter and of good moral character. In some other States, where the inferior courts are allowed to admit candidates, the requirements are exceedingly lax.

Prof. John D. Lawson, of the University of Missouri, has related an instance which shows not only how little is required for admission under present laws, but also what results sometimes follow.¹ "There was an old negro preacher in St. Louis who conceived the idea that if he were only able to hold himself out as a lawyer as well as a preacher he would do a flourishing trade among his flock. He applied for admission in St. Louis and was examined in open court. He had spelled his way through a few hundred pages of Blackstone, of some obsolete law dictionary, and the statutes of the State. Without an idea of any single sentence he had read, his examination was of course a comedy of errors, but though rejected, he was not dismayed. In a few weeks he turned up again, the happy possessor of a certificate of admission to the circuit court in one of the interior counties, and thus entitled to be enrolled in any and every other court in the State. The first client he obtained was a poor negro charged with murder. Though the prisoner was afterwards found to have acted under circumstances of justifiable self-defense, the management of the case resulted in a verdict of murder in the first degree and sentence of death. Then the poor prisoner became frightened and retained a lawyer. It was a rather difficult case to appeal; there were no points reserved; there were no errors which could be taken advantage of, and the only possible chance was to ask for a new trial on the ground of the ignorance, imbecility, and incompetency of the attorney."

Many practical business men would prefer to fall into the hands of the Phillistines and be robbed outright rather than get into the meshes of the law, where they must spend weeks of care and anxiety, vexatious postponements, and fruitless efforts, and at last come out probably with heavy loss, whether for the gain of Peter or Paul they care not.

¹ Proceedings of the American Bar Association, 1894, p. 78. 

COURTS LIGHTLY ESTEEMED.

Frank C. Smith, esq., of New York, has spoken earnestly in favor of an elevation of the legal profession,¹ that it may rid itself of those characteristics which cause men to shun it whenever possible.

"Those of us who are earnest and honest in our wish to see the practice of law resume its exalted position as one of the learned professions, can well afford to admit, without evasion, the unpleasant truths in connection with the present deplorable state of legal attainment among the members of the bar in general. In no other way can we accurately discern the evil and be equipped to relentlessly apply the apt remedy. We know that our courts are clogged with a mass of cases, a considerable proportion of which, as shown by the results, are without legal merit, but a still larger share of which are so involved in the intricacies of legal procedure that not only are they detained and ruinously retarded in their progress through the courts, but very often the question at issue, involving as it does the actual merits of the controversy, is wholly lost to sight, and for long periods of time, if, indeed, not ultimately, is beyond the reach of judicial action. This condition of affairs exists either because the practitioners of law are inefficient, because they are of such base caliber that they willingly degrade the profession by a willful obstruction or perversion of justice, or because of a combination of these two causes. In this judgment I am not overlooking the fruitful cause of delay in judicial tribunals furnished by our cumbersome and inadequate systems of procedure. Certain facts which I shall presently present will demonstrate that within the lines of the question under discussion the just objections to such systems have no measurable influence. Whatever is the cause of the condition against which this section is a living protest, all intelligent lawyers, yea, and an intelligent public, know what is the result thereof. Litigation is now popularly considered an evil. Men with rights to maintain or with wrongs to redress hesitate and often refuse to submit to the uncertainties, the tedious delays, and the wasting expense inevitable in the ordinary court processes of the day. The people are losing faith in the ability of their courts to arbitrate the differences of litigants accurately, speedily, and inexpensively. And the worst feature of this condition of affairs is that this waning faith is justified by the facts.

"The considerations which I have thus hastily presented and the ominous data which I hold in my hand, make imperative the necessity for a swift return to the professional ideal. What is needed to-day is a bar that is soundly grounded in a thorough knowledge of the law and its practice, and which will scorn, except to bring into clearer view, the true merits of the controversy, to invoke the purely technical rules of procedure. We need a bar that recognizes its duty to principle as paramount to its duty to its clients, and which will never, in behalf of client or of self, abandon principle. In addition, it is essential that the bar shall know how to employ the rules of legal procedure so as to most completely and surely serve principle. But so far has the profession fallen from this ideal, that, judged by the results of its service in actual litigation, it is to-day a monstrous charlatan. What would be said of a trade or craft against which it could be proven that in an average of nearly 50 per cent of the attempts it made to serve its patrons it failed to secure just results because its craftsmen did not understand how to use its machinery, or, understanding this, failed to employ it so as to attain the end promised when it was intrusted to do the service? Such a trade could not retain public respect and confidence an hour after its inefficiency was known. No more can one of the learned professions. Yet this is the exact condition of the practice of law in this country to-day.

"I am aware of the surprising nature of this statement; but no one can be more startled at the facts too amply sustaining it than I was when I discovered them. Anxious to learn what the decisions of our appellate tribunals would show as to the

¹ Proceedings of American Bar Association, 1894, p. 16.

character of the questions submitted to and passed upon by them, I have examined the cases reported by the West systems of reporters for the period covered by the last general digest. * * * Of the 29,942 cases decided, I ascertained that 14,447, or 48 per cent, were upon points of procedure or other matters not involving the merits of the controversy."

On this same subject, Austin Abbott, of the University Law School, New York, says: "What a boon to our community it would be if the practice of the law could be lifted above the entanglements of half-understood procedure, and if a bar trained in the logic of pleading and the practice of adducing evidence, and a bench, freed from the incessant duty of correcting errors in practice, could devote themselves fully to the free and useful reasoning of the modern American law upon the usages of business and the interests of commerce and society."

LITTLE TRAINING REQUIRED OF LAW STUDENTS.

Since medical colleges made the recent regulations concerning the number of years to be spent in the study of medicine and the number of months constituting one annual session, medical students are required to make fuller preparation and to spend a longer time in the study of their profession than any other class of men, for it must be remembered that many ministers of the gospel do not pursue any preparatory course in theology at all.

On the contrary, law students can obtain admission to the practice of their profession in a shorter time than can students in any other calling—theology, medicine, dentistry, or pharmacy. The course of study too in law schools is much shorter than in any of the other classes. In eight law schools only one year of study is required before graduation. The great majority require only two years, and one or two require three years. While students can graduate in eight law schools after only one year of study, there is not a single school of theology, medicine, dentistry, or pharmacy where a student can receive the full degree in one year, and in most of these schools a course of three years is required. Not only is a longer course of study required in the other classes than in law schools, but the percentage of students graduating is less than in law schools.

Moreover, while the course in law schools is shorter than in any of the others, a large number of law students do not take even that, but depend entirely upon private study and information acquired in a lawyer's office. While there are only about one-third more physicians than lawyers in the United States, there are about three times as many medical students as law students. The number of medical students in 1893-94 was 21,802, but of law students only 7,311.

"It is a maxim sanctioned by long and wide experience, that 'he who is not a good lawyer when he comes to the bar will seldom be a good one afterwards.' And in order to acquire such thorough acquaintance with the elements of the law, thought is requisite as well as reading; and for the purpose of thought, there must be time to digest as well as industry to acquire. One can not expect to gorge himself with law as a boa constrictor does with masses of food, and then digest it afterwards. The process of assimilation must go on, if it is to proceed healthfully and beneficially, at the same time with the reception of knowledge."¹

But possibly it is expected that the law student will acquire a large amount of legal information after his admission to practice; that the months spent in waiting for clients shall be utilized in increasing his legal attainments and therefore rigid requirement of educational qualifications should not be demanded before admission to the bar. But as objection was made to medical students engaging in practice while preparing for their profession, it might also be made to law students claiming to give legal advice while admittedly unprepared to do so.

Although a large number of poorly qualified lawyers may obtain little practice, and hence may be continually dropping out into other lines of business, it would

¹ Catalogue, law department, University of Virginia.

seem to be more prudent, both for their own sakes and for that of the profession, that they be required to take a full and regular course of instruction. It is also probable that the elimination from the profession of all those who had not received full training would diminish considerably the number of suits resulting from papers improperly drawn and advice badly given.

LAW SCHOOLS ELEVATING THE PROFESSION.

Notwithstanding what has been said as to short terms in law schools and the low standard required for entrance and graduation, the law schools are doing more to improve the standing of the legal profession than any other agency, and if it were not for the difficulties in the way they would at once raise the standard far higher. They have rightly concluded that it is better that students pursue the short course of systematic and regular instruction in a law school rather than depend upon the desultory instruction given in the office of an attorney. But so long as students can secure admission to the bar through the inferior courts after only a few months of study, and with little regard to the legal knowledge obtained, it will be impossible for law schools to require full courses of study. It is a common occurrence that students who have failed to pass the law-school examination apply at once to the courts for admission to the bar and the application is granted.

If law students were required to show a diploma from a law school before being allowed to apply for admission, just as medical students must usually show a diploma, the courses of study in law schools could easily be lengthened. It is possible that this requirement may be very generally made in a few years. The great superiority of the instruction given to large classes of young men, at regular hours, by men selected on account of their qualifications for this purpose, is now generally recognized. It has ceased to be a question for discussion, especially among the younger members of the bar. So long as the large body of older lawyers remained who had received their first lessons in law offices, mainly because there was no other place for them, and who principally enjoyed the emoluments and honors of office, it was but natural that there would be many advocates of practical training in an office. But at the present time there are law schools in all portions of the country, and, judging from the rapid increase in the number of students, their advantages are well known to all.

Prof. Jerome C. Knowlton has said: "It is the lawyers that are to blame. The law schools are anxious to have a three years' course and have a high standard for admission to the junior class. In my judgment, no student should be admitted who is not qualified for admission to the academical department. Some have gone so far as to say that a student ought to have a bachelor of arts degree or a bachelor of letters degree. Of course, we are not prepared to admit that, but a higher standard of education and a three years' course are what is desired. Still we never can have it until the bar do something toward closing the doors of admission to practice to all, irrespective of education, either professional or academic."

Unless the legal profession make some united effort to elevate their standard, it will probably remain unchanged. The requirements for higher medical education would never have been accomplished without the earnest and continued efforts of the medical associations of the different States, led on by the national associations. The American Bar Association has already started a movement in favor of advancement, both intellectually and ethically, and if its efforts should be supported and strengthened by the profession in the different States it would soon be impossible for anyone to register as an attorney who had not received full preliminary training. One difficulty, however, will stand in the way of enlisting all of the profession in behalf of higher legal education, unless they possess a greater degree of altruism than is sometimes accredited them, namely, that so much of the work falling to them results from the mistakes and ignorance of their compeers, and if deprived of this work they would lose something thereby, although gaining in the end.

LAW DEGREES.

There are eight law schools which grant the degree of bachelor of laws after only one year of study. Most of the schools require two years, and a few require three years. Several schools grant the bachelor's degree after completion of the regular course and then offer an additional year of study which entitles to the degree of master of laws. This is done by Cornell, Yale, the four schools at Washington, D. C., the University Law School of New York City, the Michigan and Missouri Universities, and at Dickinson College, Pennsylvania. The New York Law School requires an attendance of four years in order to obtain the degree of master of laws.

The Yale Law School grants the degree of bachelor of laws after two years of study, master of laws after three years, and doctor of civil law after four years of study. The catalogue says: "It is believed that the studies of the undergraduate course and those of the first year of the graduate course cover all the topics which it is desirable for the ordinary law student to examine before admission to the bar; and the fourth year, in which the degree of doctor of civil law is awarded, is recommended only to those who desire to fit themselves to be something more than practicing attorneys."

In the District of Columbia admission to the bar can only be secured after three years' study of law; hence large numbers of students take the course of two years for the degree of bachelor of laws, and then a third year, which both gives the degree of master of laws and allows them to apply for examination for admission to the bar. If it were not for the requirement of three years of study, it is doubtful whether half as many students would take the third year's course.

President Henry Wade Rogers says: "In States where a three years' course of study is prescribed by statute or by rule of court as an essential qualification for admission to the bar, the law schools can readily establish and insist on the same period as a qualification of the bachelor's degree. But when this is not the case the problem becomes more difficult, and the difficulty is enhanced when, in addition to the embarrassment already alluded to, there happen to be in close proximity other schools conducted according to commercial rather than scholastic standards, and seeking for patronage by shorter terms and lower fees."

There are some law schools which have a course of three years prescribed, and in some cases mainly accepted by the students, but at the same time the privilege is allowed of completing the course in two years. The student can therefore receive the degree of bachelor of laws in two years. These schools are the University of Notre Dame, Indiana (see catalogue of 1893-94, p. 68), University of Maryland (catalogue of 1894, p. 15), Boston University (1893-94, p. 18), Harvard University (1893-94, p. 6), Metropolis Law School (1893-94, p. 12), and Western Reserve University (1893-94, p. 11).

Judging from the wording of the course of instruction in Columbia College Law School (catalogue of 1893-94, p. 152), it seems that students in some cases, with the consent of the faculty, can graduate in two years.

The University of Pennsylvania and Hastings College of the Law (University of California) seem to be, therefore, the only two schools of law requiring under all circumstances three full years of study of law from students with full preliminary training. The catalogue of the University of Pennsylvania says: "Under the statutes of the university, the degree of bachelor of laws is granted to candidates who have attended upon the full course of instruction in the law department, and who have passed satisfactory examinations upon the subjects of instruction." "The full course requires attendance for three years, and is graded. Students of the first-year class are not permitted to attend the lectures of the second and third year, and students of the second-year class are not permitted to attend the lectures of the third year."

The University of Pennsylvania also has a post-graduate course in law of two years, completion of which secures the title master of laws.

The University of Michigan has announced that it will require a three years' course of law, beginning with 1895-96. The University of Wisconsin has announced a similar intention.

METHODS OF INSTRUCTION IN LAW.

A question of considerable interest at the present time to the law schools is as to the best method of instructing the student in law. There are three systems in use. In some law schools instruction is given mainly by lectures; in others it is given mainly by recitations upon lessons previously assigned, together with the usual explanations and comments; and in three schools it is given mainly by the presentation and discussion of leading cases.

The method most generally employed is that of lectures on the different subjects, followed the succeeding day by questions on the previous lecture. The students are also expected to read up the same subjects in their text-books, and there may be occasional examinations.

The method coming next in general use is that of recitations upon lessons assigned in text-books, supplemented by occasional lectures.

In nearly all of the schools there are moot courts, or, perhaps, regular practice courts, in which the students get experience in the actual discharge of the lawyer's work.

An examination of the catalogues of the majority of the schools has been made to ascertain the method of instruction mainly employed, but it should be stated that in nearly all the schools there are supplementary methods adopted, such as reviews, examinations, exercises in drafting contracts, conveyances, pleadings, indictments, and other legal papers, the criticism of briefs, arguments in moot courts, courses of reading, etc.

In 33 schools the instruction is given mainly by lectures; in 24 schools it is given mainly by recitations from text-books. In three schools the discussion and explanation of leading cases is relied upon mainly. These three schools are Harvard University, the Metropolis Law School, and Western Reserve University.

The New York Law School, the Iowa College of Law, and Kent Law School of Chicago are strongly in favor of what they call the Dwight method, in which the use of text-books enters largely; Yale University and the University of Nebraska also favor much the use of text-books.

University of Alabama.—Lectures and text-books.

University of California.—"All three systems of legal instruction are used, namely, a study of text-books, an examination of illustrative cases, and lectures."

University of Colorado.—"While the method of instruction is mainly that of recitations, certain subjects are separately taught by lectures, and the study of leading cases is made an important feature of the work."

Denver Law School.—Text-book instruction, supplemented by study of leading cases, and lectures.

Yale University.—Text-books. "The method of instruction is mainly that of recitations. It is the conviction of the faculty of this department, as well as the tradition of the university, that definite and permanent impressions concerning the principles and rules of any abstract science are best acquired by the study of standard text-books in private, followed by the examinations and explanations of the recitation room. Hence, although certain subjects are separately taught by lectures, either because the want of proper manuals or the constant and rapid advance of learning or economy of time requires the adoption of that method, care is taken that the same topic shall be covered by recitation work in connection with the wider branches of the law to which they belong. Reported cases of special importance as illustrating the development of law into leading branches are also referred to, and many of these are separately printed by the department and distributed for more ready consultation."

Columbian University.—Lectures mainly, followed by "quizzes."

Georgetown University.—Same as above

National University.—Text-books.

University of Georgia.—Text-books and lectures. "From experience, as well as observation, it is believed that the lecture system alone does not meet the necessities of the case. However learned the lecturer and however attentive the student, the impression left upon the beginner's mind is not so permanent as that produced by his own study of the subject, reenforced by the oral recitations and by the explanations of the professor."

Atlanta Law School.—"The lecture, text-book, and case systems will be combined in the instruction given."

Mercer University.—"Recitations of lessons assigned is the main method of instruction, with comments and explanations by the instructor."

Illinois Wesleyan University.—"The method adopted is mainly that of daily recitations from the best approved text-books."

Chicago College of Law.—Text-books, together with lectures and cases.

Kent Law School of Chicago.—The Dwight method of instruction (text-book instruction). See under New York Law School.

Northwestern University.—Lectures mainly, but the method pursued "is not confined to instruction by lectures and through the use of text-books. Students will be required to make a careful study of cases. The faculty do not deem it judicious to adopt the case system of instruction as the sole method of teaching the law, but they will make such use of it in connection with the work of the school as seems to them best adapted to the promotion of the progress and training of the students."

McKendree Law School.—"It can not be expected that every student will derive equal advantage from the same method of instruction; hence an effort is made to combine the various methods usually adopted so as to aid all."

Chaddock College.—Text-books.

Indiana University.—Text-books, lectures, and cases.

Notre Dame.—Lectures. "Quizzes" and analysis of leading cases are also used.

Iowa College of Law.—"The deductive, or what is generally known nowadays as the Dwight system, is the one which is followed by us, although case law and the study of cases is given a prominent place both in recitations and in moot court work."

Iowa University.—All three of the methods are used.

University of Kansas.—Text-books, supplemented by lectures.

University of Louisville.—Lectures, text-books, and cases.

Tulane University of Louisiana.—Lectures.

University of Maryland.—Lectures, followed by questions.

Baltimore University.—Lectures, followed by questions.

Boston University.—Lectures, together with text-book recitations and reference to cases.

Harvard University.—Cases, with supplementary lectures.

University of Michigan.—Lectures. "The members of both classes are examined daily throughout the year on the lectures delivered." "In addition to the instruction by lectures is the instruction by text-book."

Detroit College of Law.—Text-books. "The instruction is mainly by means of recitations on lessons previously assigned." Lectures and leading cases are also made use of.

University of Minnesota.—Lectures, combined with recitations and reference to leading cases.

University of Mississippi.—Text-books.

University of Missouri.—Lectures, text-books, cases. "The law faculty is satisfied, from experience, that the highest results can not be reached by lectures alone, however clear and thorough they may be, but that the students, as far as possible, should be required to study the text of some approved treatise on the subject of instruction,

and to examine critically well-considered cases illustrating the principles discussed in the lecture room."

St. Louis Law School.—Lectures and text-books.

University of Nebraska.—Text-books. "It is believed that definite and permanent impressions concerning the principles and rules of law are best acquired by the study of standard text-books in private, followed by the examinations and explanations of the recitation room. The curriculum is therefore based very largely upon the use of text-books, with daily recitations, but the course of instruction aims to combine the advantages of all approved systems, and includes lectures, practical exercises in drafting legal papers, and the careful study of selected cases."

Albany Law School.—Lectures, text-books, and discussion of cases.

Buffalo Law School.—Lectures, leading cases, text-books.

Cornell.—Lectures, text-books, cases.

New York Law School.—Text-books, supplemented by explanatory lectures and the reading of reported cases. The system as used by Prof. Theodore W. Dwight is described as follows:

(1) "Elementary and preparatory topics are studied before those which are more difficult and abstruse.

(2) "The study of substantive law, embodying the principles of law in respect to rights, interests, estates, and obligations, and the reasons on which such principles rest, precedes the study of the law of procedure, i. e., of evidence, pleading, and practice.

(3) "Any particular topic as, e. g., the law of contracts, the law of real property, etc., having been begun, is pursued continuously, day by day, until it is completed. In this way the topic is kept fresh and vivid in the student's mind, the acquirements of each day's study become the sure stepping stone to those of the next day, and the principles of classification and arrangement pursued in the development of the subject are more likely to be clearly comprehended.

(4) "The student is instructed in the principles of law and the reasons upon which they are based, and is taught to view the law as a system of principles and not as a mere aggregation or collection of cases decided by the courts. Though it be true that legal principles are to be deduced from the study of judicial decisions and of statutes, yet it is evident that the well-trained jurist, with his rich stores of legal learning, his ample experience, and his acquaintance with the rules of legal construction, is much better qualified for this work than the inexperienced student, having little or no knowledge of legal doctrines. Hence the student is not set at work primarily upon the reported cases or decisions in order that he may himself deduce therefrom the principles of law, but some valuable treatise written by a competent legal author, and presenting in orderly form and arrangement the body of legal principles relating to a particular topic or branch of law, is studied carefully by the student from day to day and daily recitations are held in the class room. A certain portion of the text-book is assigned each day for the next day's exercise, and the student is expected to master the rules and principles therein set forth so as to be able to state them clearly and accurately in his own language when called upon for recitation. Then, in the class-room, the professor endeavors, by exposition, by illustration, by simpler forms of statement than the author of the book may have used to resolve whatever difficulties may have been found by the students in their study of the treatise. He seeks to make especially prominent those principles of law which are of the most broad and comprehensive scope, and to classify subordinate rules and principles in their due relative order.

"This study of legal principles finds in the reading of reported cases its appropriate supplement. The student may properly begin such a practice of accessory reading early in his course of legal study, and gradually broaden the scope and extent of such reading as his legal knowledge becomes more full and comprehensive. Leading cases which are most valuable for collateral reading will be cited to the

classes by the professors, who will also aim to embody in their daily exposition the conclusions to be derived from the most important decisions which have appeared since the text-book was published. In some topics volumes of selected cases, prepared by the professors, will be read in connection with the text-books for the purpose of illustration."

(5) "Reviews are held at proper intervals to impress the subjects taught more vividly and permanently upon the memory."

University of the City of New York.—The system of instruction is not framed upon the theory that there is one "best method" for instruction of all minds upon all legal subjects. Some parts of all subjects are taught by lectures. A very few subjects are taught wholly by lectures; some study of nearly all subjects is by text-books; some subjects are taught mainly by selected cases.

Metropolis Law School.—"The method of instruction mainly pursued is that based on the study and discussion of selected cases."

University of North Carolina.—Lectures and recitations.

Shaw University.—Lectures and text-books.

Cincinnati Law School.—Lectures, text-books, leading cases.

Western Reserve University.—"The method of teaching pursued in most of the courses is by a thorough discussion of leading cases and a careful study of the leading text writers."

Ohio State University.—Text-books, lectures, and leading cases. "The preference is given to the recitation, exposition, and quiz system."

University of Oregon.—Lectures and text-books.

Willamette University.—Lectures, text-books, and cases.

Dickinson College.—Text-books mainly.

University of Pennsylvania.—Lectures and text-books.

University of South Carolina.—Lectures and text-books.

University of Tennessee.—Lectures and text-books.

Cumberland University.—Text-books. "Every subject upon which a lecture could be given has been exhausted by the ablest professors, and printed in books, after the most careful revision by the authors. We would regard it as an imposition on students, and as presumptuous on our part to pretend that we could improve upon Kent, Story, Greenleaf, Parsons, and others, who have given to the public, in printed form and acceptable to all, lectures on every branch of the law."

University of the South.—Lectures, text-books, and discussion of leading cases.

Vanderbilt University.—Text-books and lectures.

University of Texas.—Text-books and lectures.

Washington and Lee University.—Text-books, lectures, and cases.

Richmond College.—Text-books and lectures.

University of Virginia.—Text-books and lectures.

University of West Virginia.—Lectures and text-books.

University of Wisconsin.—Lectures, leading cases, text-books.

METHODS OF INSTRUCTION IN LAW.

[From Proceedings of the American Bar Association, Saratoga, N. Y., 1894.]

President Henry Wade Rogers, of Evanston, Ill., on methods of instruction:

"The great question which interests legal educators to-day is as to methods of instruction. The first method used was that of lectures. Mr. Justice Wilson lectured in the University of Pennsylvania, as did Chancellor Kent at Columbia. Story and Greenleaf and Parsons lectured at Harvard. The lecture system was in the early days a matter of necessity, as there were no books suitable for the student to use. The text-book system of instruction came next, and last of all the case system.

The lecture system is to-day the prevailing method of instruction at the University of Michigan and at the University of Pennsylvania, and is used in a limited degree in almost all of the schools. Of the three systems it is, perhaps, the least in favor, and in the large majority of the schools is only resorted to in special subjects [f]. The text-book system seems to be the one most generally employed. It was used by Theodore W. Dwight at Columbia from the opening of that school until the termination of his work as a law instructor. It has been the method favored at Yale, Boston, St. Louis, and the New York Law School. The case system was introduced at Harvard by Professor Langdell in 1870. Until recently it has not been favored by other schools. The schools attaching the most importance to the system and making the most use of it at present are Harvard, Columbia, the Metropolis Law School in New York, Cornell University, Northwestern University, and the law school of the Western Reserve University at Cleveland. No one of these three methods can be pronounced the best for all subjects and under all circumstances. The answer to the question which is best must depend on the character of the teacher and the taught, as well as on the branch taught. Very many of the schools adopt no one method, but make use of all three."

James H. Raymond, of Illinois: "It is the result of my observation that one or the other of these systems predominates in law schools, according to the aptitude of the professors to teach one or the other system. Then there is another comment which fits right in here. I think I see a very clear distinction between the students of one Eastern law school and another, and the complexion of their minds, and the law school at the Northwestern University. The method of instruction, and the management of the school in one place will not fit in the other place. We have not any students in the Northwestern University who are there simply because their fathers do not know what else to do with them. Each one is getting something out of the lectures and out of the case system, although I admit that in our school to-day the latter is being pushed because of the special ability of our professors in that direction. But I do not believe in it as a basis for legal education. The power of every man's mind is the power of original thought, induction, and deduction. I was very glad to hear so frank a confession in the paper about it. You can not educate a lawyer without educating him to think for himself, and, by so much as you put into him the power of original thought, which must be by inductive methods, in my opinion, by just so much do you make of him a lawyer instead of a machine."

Simeon E. Baldwin, of Connecticut: "I think there can be no question that the 'case' system must always be an important part of legal education. But what case system? Is there any system which can lay special claim to that denomination? Is there any law school which to-day does not make large and systematic use of cases in instruction? I venture to say there is none, and I think we almost might say that from the beginning of legal education in this country, one hundred and ten years ago, in the Litchfield Law School, cases were used, though sparingly, for the purpose of instruction as well as of illustration. There seems to be a certain sort of evolution which has gone on during the last few years in regard to the systematic use of cases in law-school teaching. When I studied law—for a time at Yale and for a time at Harvard—cases were freely referred to by the instructor, by no means simply by way of illustration, but as a basis of exploration on the part of the student—as monuments in judicial history. *Marbury v. Madison*. What man who was at the Harvard Law School thirty years ago who does not remember the insistence with which that case was commended to the attention of the student?

"We should regard it as wiser to make the lecture the main thing and the cases the additional thing, rather than to make the cases the main thing and the lecture the additional thing. If we are examining a certain subject in the line of question and answer between professor and student, we should think it better to give them a chapter of the author and cases and examine them upon both rather than to give them either alone. I mean particularly the advanced student, for I confess I can

not bring myself to believe that the best way to teach a young man just beginning law is to plunge him at once into even Ames's cases. When I began the study of Euclid they made me learn some axioms and propositions, and I am very thankful they did. When I began to go to school they made me learn a certain thing they called the multiplication table. It was not explained to me in a very philosophical way, but they made me learn it. There are certain things that we must make these young men learn and remember, and then go on to build, to induce and to deduce. But there must be a foundation, it seems to me, and the best place to go for that foundation is where the rules and doctrines and principles are most clearly laid down. I should be very sorry to see text-books disappear from a legitimate place in law-school instruction."

Amasa M. Eaton, of Rhode Island: "It seems to me that perhaps the term 'case system' is in itself rather unfortunate. Would it not be better to distinguish it as a Socratic method? for that seems to be the distinguishing mark—I had almost said the distinguishing excellence—of that system of teaching law. I have studied under both systems. Let me explain what I understand by the Socratic system. Certain cases are given out the day beforehand and the students have time to look them over. They come in with a certain amount of study upon those cases. Mr. A is called upon: 'Will you state the case of *Brown v. Jones*?' He states it. That teaches him how to group and state accurately facts, which in itself is a very important element in a lawyer's career. He is then asked, perhaps, 'Mr. A, do you agree with the case? If so, state why.' Mr. A then states that he either does or does not agree with it, and states the ground for his belief. The professor then calls upon someone who is of the opposite mind, and some other student states his reasons for his dissent. In that way the class room is immediately divided, and it is like the trial of a case in court. When both sides have finished, the teacher sums up, and then, perhaps, announces his opinion. The result is, as it seems to me, that the principles which have been illustrated, which have been brought out of the minds of the students, will forever remain fixed in their memories. It is not because they have read them in some books, but it is because they have been brought out of themselves. That seems to me to be the highest form of education. I would not advocate the exclusive use of this system. There are certain principles of law which can not be so well studied in this way. There are certain cases which must be studied. Take, for instance, the rule in *Shelley's case*. There is an absolute principle of law, and we must all learn it. Combined with this some teachers give definitions, so that the terms which are to be used a few days afterwards in the study of certain cases are understood before reaching the cases. It certainly seems to me, looking at it in this point of view, that this method has advantages over all others. I agree that a great deal depends upon the personality of the teacher, and a method which will work well in the hands of one man will not work well in the hands of another; but, all things considered, it seems to me that this method possesses peculiar excellence and is in itself scientific."

Austin Abbott, of New York: "We should endeavor to promote the improvement of legal education by pointing out to those who have never used the case system how they can wisely and judiciously, if they wish, begin to try it, and see how it works with their own method of instruction and with their students, and to gain from those who are using the case system also some suggestions of how text-book and lecture instruction may supplement, enlarge, and fill out the gaps and hiatus of case instruction."

"I can not doubt that if I wanted myself to learn the best statement of the law it would be incomplete for me to read Chancellor Kent's *Judgments in Court* without looking into his *Commentaries* to see how he coordinated that case with all the other cases on the subject. A case runs one line and another case runs another line of decisions, and a third case another principle. I apprehend we shall find that the true solution of this question will be in giving some case instruction and in filling

in the broad hiatus between the cases with that coordination of principles which is to be aided best by the recent discussion of jurists, considering the law in the light of the broad interests of society, and not confined to the narrow compass of one statement of facts; and therein I think we shall find (there are text-books and text-books) the indispensable value of text-books with cases, as giving not merely a single line of thought with an instructor's opinion on the subject, but giving them that same great jurist's view of the coordination of that with all its fellow-cases."

John F. Dillon, of New York: "Now, it is my judgment that Harvard has taught the law schools of the country a great lesson in emphasizing the extreme importance of cases as an element of teaching. It makes a vast difference, certainly, whether the teacher states a principle of law in the form of a lecture and propounds it to the student whose mind is new, or whether he refers the student to some case which has actually arisen, selected with judgment, in order to illustrate the point, and which is thus made, as it were, an object lesson, so that he sees the principle in connection with its application. If a student is given forty pages of some text-book as his lesson, and that is not unusual, I believe, and he is required to come into the lecture room the next morning prepared to recite them, although the teacher has given out that they will find this principle illustrated in such and such a case, if it is optional with the student to read that case and you have a class of one hundred or two hundred students, I ask you how many will actually read the case?"

"I should say that the first want of these law schools would be a compilation of cases so multiplied that the students can have access to them, or each one can be supplied with them. Having given this much testimony in favor of the case system—and I think it has been underrated—when it is sought to erect that as the only method of instruction, and I have learned that it is not, then that would be equivalent to saying that there is no such thing as elementary conceptions of law. When there runs throughout the jurisprudence of Europe and America the broad distinction between the law of realty and the law of personality, do you have to refer a student to some case or line of cases to teach him that there is in English and American law this wide distinction, and require him to arrive at it by some process of induction? I think not. That would be wasting his time. There are elementary truths and conceptions and definitions in law that are adapted to be taught as such; therefore to make it obligatory to the student to try to get at them by a process of original thought is time wasted. If the law is not a science, and if it does not consist of a comparatively few principles capable of expression, then we ought to abolish the law schools.

"Doubtless the method of teaching law, or how it can best be taught, is an important subject, but it is not all-important. It is wise to discuss and consider it, but it would not be wise to let it engross our whole or even our chief attention. What Pope said of forms of government may, I think, be said with much more justice of methods of teaching—'that which is best administered is best.' The man whom nature designed to be a teacher of law will, despite all theories, teach it after his own manner. He will impress his own personality upon his work. It is the man, not the method, that tells. The crucial test is whether the teacher can inspire a living interest in the student and get from him the best work that in him lies, for, after all, the student must himself do all the work and the thinking which shall accomplish him in the learning and mystery of his profession."

Woodrow Wilson, of Princeton, N. J.: "The question is, whether the law, when taught as a profession, should be taught by the inductive use of cases or by the deductive use of principles already extracted from the cases and furnished in texts. The teaching of law as a profession should no more be irrational than the teaching of it as part of a liberal education or as a preparation for law studies. The case method, therefore, falls short and is slavish if it stops in each instance with the first case in a series. Where did the court get their principle from in the first case, if there was, indeed, neither statute nor precedent; and, if there was a statute, what

guided them to its interior meaning? Such are the questions which reveal to the student, when successfully answered, the real genesis and significance of law. In like manner, the text-book method is neither philosophical nor really instructive unless the principles made use of are challenged, cross-questioned, and made to give a rational account of themselves. It is only when principle is thus realized as a living and necessary thing, with as clear a pedigree and explanation as a horse or a king, that it can become really a part of the lawyer's thought and judgment and professional equipment. The first case, of course, came to the judges out of a special set of circumstances in the community around them, and they were able to decide it because they understood the conditions out of which it had arisen and knew what those conditions demanded. They pluck out the heart of a statute in the same way by understanding what gave rise to its enactment and what it is that it is intended to accomplish. The judge, after all, if he be of the sort we quote and make a veritable authority of, is a seer and a man who might have been a statesman or a professor of political science. The 'common' law we believe to have arisen out of custom—out of the life of the people; and have not all our writers upon the common law, from astute Sir Matthew Hale down to formal Mr. Broom, assumed that statutes are made but in supplement to it or amendment of it, as if it were complete and they exceptional? This is plainly the assumption of the celebrated maxims with regard to the interpretation of statutes: 'What was the common law before the making of the act?' 'What was the mischief and defect against which the common law did not provide?' 'What remedy has the legislature devised and applied?' 'The true reason of the remedy?' And have you not noted the result of this process of interpretation—the new law held up to the standard of the old and treated as if it were meant, of course, to be fitted into it? Old statutes disappear, as it were, by digestion into the general body of principles; or, rather, for the process is deliberate, they are kneaded into the mass by much pressing and handling in the courts, until writers are sorely puzzled to distinguish common from statute law. New statutes, too, immediately begin to feel and yield to the same process. In time they, too, will be so knitted into the body of the law by the careful stitches of successive generations of judges as to have become fairly indistinguishable from the material with which they have been combined. Through the courts they are being played upon and weather-beaten by the practical conditions of the economic and moral life of the community, and so are being steadily molded by forces which the student must afterwards reexamine if he would comprehend and veritably master the law which is their product.

"To take a definite example, in order to make my meaning clearer, it is a favorite idea of mine that commercial law should be taught along with the history of commerce, which will make it plain what gave rise to the relations of business with which the law deals, how the forms of commercial negotiation and of commercial paper came into existence, and how statutes and all the imperative regulations of the law have come after the fact, fixing obligations already habitually recognized, or at any rate ready to be put into form, and so, simply serving merchants, not inventing transactions for them. One portion of our law we already study in this way—the law of real property. It has retained forms and phrases which we can not understand without turning back to examine the feudal system and the social conditions of the Middle Ages; and so we are happily obliged to give heed to its genesis. We ought to do the same for every portion of the law."

M. J. Wade, of Iowa: "I think it is immaterial what system a professor teaches by, whether by the lecture, or the case, or the text-book system, or all three combined. I dare say that no man of experience in teaching law will undertake to teach law so dependent upon cases, whether he follows the text-book system for his basis or not, and not only depend upon them, but insist that students shall read them. There is no question, in my mind, that the point is where the student embraces a knowledge of what the general principle is; that then, in the application

of those principles to the various states of facts that are presented, the case is the best medium to impart that knowledge."

Edmund Wetmore, of New York: "A controversy conducted with great earnestness has been carried on of late years between the advocates of the so-called 'text-book' and 'case' systems as methods of legal education. In such a controversy it becomes any lawyer who lacks experience in actual teaching to speak with diffidence, but some things relating to the matter are within the range of ordinary observation and reasoning.

"The difference between the two methods of legal instruction consists, as I understand it, essentially in this: By the text-book system the study of a standard text-book, enforced by recitation and accompanied by lectures and comment, is made the foundation for the introduction of the student to the study of the law. The chief aim is the direct study of principles and definitions—their meaning, their reason, their history. Cases are used at first mainly for illustration. As the student advances, the practice of examining the authorities becomes more frequent, and he acquires experience in ascertaining the precise point decided in any given case, and in deducing the rules to be devised by the collation and comparison of the cases relating to particular topics.

"In the case system, as it is explained by those who teach it, the reported cases are the basis of instruction, and the classification and exposition of the principles to be derived from the cases is given wholly by oral discussion or exposition incidental to the examination of the cases, or by occasional reference to the text-books. Of course, there is no hard and fast line of demarcation between these two methods, and the extent to which relative resort may be profitably had to the text-book or the cases as the basis of instruction will largely depend upon the experience and particular methods of each individual instructor; but there is, nevertheless, a plain distinction between the two systems. The difference in this respect, in the course of instruction pursued in different law schools, all of high standing, is marked, and both systems, in the hands of competent instructors, prove highly successful in their results.

"Notwithstanding this last fact, however, if I understand what for convenience may be called the case system, it seems to me that it is not strictly philosophical, and is, consequently, liable to defects in practice.

"This may appear, at first sight, just the reverse of the truth, for as principles are derived from cases and the cases are the record of the application of those principles, and to learn how to apply principles to facts is the business of the practicing lawyer, one would say that the study of cases was the direct path to learning the theory and practice of the law at the same time. But this view overlooks the natural operation of the mind in apprehending and mastering, for the first time, an applied science. The best way to teach a student to draw principles from cases may not be to set him at once to drawing conclusions as best he can, leaving it to the teacher to point out his mistakes. In teaching any science there is a certain amount of preliminary work to be done before the student begins to learn the art of applying its principles. I believe the most efficient method of giving this necessary preliminary instruction is to give it directly in a systematic form, rather than to confine the instruction to commentary upon instances of its application. A cadet may learn navigation wholly on shipboard by taking his turn at the wheel, and gradually picking up the principles of the science by daily familiarity with their application and by oral instructions from older officers; but he not only would have learned the art more easily, but his practical knowledge would always retain a more scientific basis, if he had had a preliminary course in the theory of navigation derived from the best text-books under a competent instructor, even if he went through such a course before he ever set foot on the deck of a vessel. It was noticeable that, almost without exception, the men who rose to the highest commands and accomplished the greatest results, on both sides, during our civil war, were not those who rose from

the ranks, or those whose sole training had been from actual experience in the field, but those who had been grounded in the theory of the art of war on land and sea by the systematic course of study pursued in the class rooms at Annapolis and West Point. The same rule holds true in natural sciences, in medicine, in chemistry, in botany. Some knowledge—some elementary, carefully inculcated and methodically arranged knowledge of principles and laws—should precede, and, where those sciences are taught, almost invariably does precede, the study of those principles and laws in their application, except so far as their application is studied by way of illustration of the text.

"This will not, perhaps, be disputed as a general proposition, but as applied to the study of law the advocates of the case system hold, as I understand it, that the student at the very beginning of his course should be given a number of selected cases to read in order to find out as well as he can what they decide, and the necessary elementary knowledge as to principles intended to be applied in those cases is furnished by oral instruction and colloquy in the class room.

"It seems to me that this mode of inculcating fundamental principles lacks the method and precision of statement which belong to a carefully prepared treatise or written lecture, and yet a methodical arrangement and division of the topics and subtopics is surely the most efficient means of apprehending those topics in the first instance and implanting them in the mind of the student without confusion, while precision of statement as to fundamental definitions and rules of law is not only necessary for accuracy, but one who has thoroughly learned the rules thus exactly expressed has a foundation of the greatest value throughout his practice, just as the fundamental rules of grammar or the fundamental rules and definitions of mathematics which were learned at school serve the professional linguist or the civil engineer in the subsequent practical application of the sciences to which they respectively relate. I find it hard to believe, for example, that a student of average ability and industry, knowing nothing of the law, and who in the year 1765 had set himself the task of acquiring a knowledge of the laws of England, could by two or even three years' study of the reports as they then stood, under competent instruction, have acquired as thorough an understanding or as comprehensive and philosophical a view of those laws as he would have done if, under equally competent instruction, the basis of his studies had been the masterly commentaries of Sir William Blackstone. Further, as it seems to me, the process of drawing principles from cases is necessarily too slow to cover a sufficiently extensive field to meet the requirements of a proper course of study, especially if that course be limited to two years. The primary object of legal instruction is to teach the student what the law is upon a sufficiently large number of topics to give him a general knowledge of all its most important branches. Secondarily, he should be taught the art of finding out what the law is by searching the authorities, but the first is the most important for his student days, because his practice will constantly teach him the latter, and the more that practice grows the less time it will leave him for any professional studies outside his own cases.

"If it be said that knowledge thus acquired is superficial, and that this applies to the knowledge which attempts to cover a wide field of law, and is based on text-book reading and case illustration, the answer, as it seems to me, is that knowledge thus acquired is not, or at least ought not to be, superficial, but merely elementary. And elementary law and elementary principles are all that a law course can profitably undertake to cover. The most it can accomplish is not to turn out a completed lawyer, but one who is fitted to become a lawyer. If it supplies him with the requisite elementary knowledge and starts him right, it is all that the law school can do.

"And in starting him right too great pains can not be taken to impress upon his mind the true character of the fundamental principles which underlie our law, and to teach him to regard it in its proper light as a science resting fundamentally, not upon the exposition of the judge, as the Roman law depended upon the rescripts of

an absolute emperor, but upon the enlightened conscience of the people by whom the law is ultimately formed. The reports are not the only source from which these principles are to be learned. The court, in giving its decision and the reasons therefor, always proceeds upon the theory of the existence of a higher authority than itself, and in tracing the principles which the courts are called upon to apply to their deepest ascertainable source by collating and classifying them, by asking, 'How did they arise?' 'Upon what reasons do they rest?' the student is making that higher authority the direct object of his researches, and learning to appreciate that, rightly understood, the law is indeed the perfection of human reason. Whatever the method by which this end is sought, no one will question that it is the end to which all methods should be directed. He best argues his cases who considers not how he can match his facts with precedents as he might match from his hand in a game of dominoes, but how he can best rest the judgment that he seeks upon the right and reason of the law."

William A. Keener, of New York: "It is a curious contradiction that at a time when it is universally recognized that the teaching of law is one of the functions to be discharged by a university, opposition should be raised to the adoption of a method of teaching law that is applied in nearly all departments of university work.

"In view of the well-known conservatism of lawyers, I can not help feeling that this opposition is explained in part by ignorance of the fact that the teaching of law by the study of cases is but the application to the study of law of a method that has been almost universally accepted in other departments of education. I must confess to surprise on ascertaining the extent to which it has been applied in all departments of education, not only in colleges and universities, but even in the secondary schools. Because of this ignorance on my part I was somewhat surprised when I was informed recently by a distinguished educator whom I told of the preparation of this paper that the theory of the inductive method was accepted so universally to-day in educational circles that an assumption that argument was necessary to support it would create merriment in a large gathering of teachers which was then about to convene.

"An examination of the report of the committee of ten on secondary school studies appointed by the National Educational Association at a meeting held at this place last year, and published by the United States Bureau of Education, shows how strongly the method is recommended for the use of secondary schools. Of its recognition to-day by colleges and universities of which we are accustomed to expect the best methods there can be no question. Indeed, ten years ago (and the strides in educational methods during the last ten years have been great) we find the principle fully recognized in the teaching of natural science, and even prior to that time the method had been applied in the teaching of history, and is now regarded by the best educators as the proper method of historical study. It is of this method that Prof. Herbert B. Adams, of Johns Hopkins University, says: 'The main principle of historical training at the Johns Hopkins University is to encourage independent thought and research. Little heed is given to text-books or the mere phraseology of history, but all stress is laid upon clear and original statements of fact and opinion, whether the student's own or the opinion of a consulted author. The comparative method of reading and study is followed by means of assigning to individual members of the class separate topics, with references to various standard works. These topics are duly reported upon by the appointees, either *ex tempore*, with the aid of a few notes, or in formal papers, which are discussed at length by the class. The oral method has been found to afford a better opportunity than essays for question and discussion, and it is in itself a good means of individual training, for the student thereby learns to think more of substance than of form.'

"A higher authority than Professor Adams can not be quoted, and a nearer approach to the case method of instruction can not be found than the method described by him. It seems to be no longer true that the student of history is given

a text-book from which to recite, as one would recite from the pages of a Latin grammar, but is referred to the accessible authorities, which he is required to examine with a view to forming conclusions and expressing opinion. Indeed, not only is the student of history to-day required to study in this way, but he is often, when the material is available, especially if he is studying as a professional student in history, required to go to the original sources and make investigations.

"If law is a science—and if it is not a science it has no place in the curriculum of a university—all will agree that the most scientific method should be adopted in teaching law. Why, then, has not the inductive method, which has been so universally accepted, been more generally applied to the teaching of law? It can not be for the reason that the object of a legal education differs from that of education in general. The object of education generally is stated as follows in the report of the committee of ten, to which I have before referred: 'The principal end of all education is training. * * * The mind is chiefly developed in three ways: by cultivating the powers of discriminating observation, by strengthening the logical faculty of following an argument from point to point, and by improving the process of comparison—that is, the judgment.' Can anyone question that the power of discriminating observation, that the possession of the logical faculty of following an argument from point to point, and the ability to judge accurately are among the most indispensable qualities of a lawyer? If they are, why is not the method which will enable the student to acquire these faculties, while at the same time possessing himself of a fund of information, the one best adapted to the study of law? It is for this reason that it does best enable one to think vividly, analyze accurately, to reason and express himself clearly, and in the case of applied sciences to apply effectually the knowledge that he has gained that the inductive method has obtained such a hold to-day. I shall endeavor to show hereafter that this method is well adapted to the imparting of information.

"Assuming the method to have been properly adopted in other departments of education, why should it not be adopted in the study of law? Must it be rejected for the want of material? When one remembers that sufficient material has been found accessible for the teaching of history by the inductive method this question answers itself, for in no other department of education is there found material so rich, so abundant, and so accessible as in that of law. Since the advocates of the inductive system believe that in law as in other sciences the student, where it is possible, should be referred to the original sources as the basis of instruction, and not allowed to consult simply the deductions that may have been drawn by writers from sources equally accessible to the student, the material to which I refer is, of course, the adjudicated cases found in the reports of the decisions of the courts in this country, in England, and in other countries where our system of law prevails.

"For the purposes of the inductive method it is quite immaterial, as has been pointed out by the committee of the American Bar Association on legal education, whether the cases are to be regarded as the original sources, in the sense that they make the law as a statute makes law, or simply as evidence of the law, and but an application of principles to particular facts. 'That the decided cases,' says the committee, 'are the sources from which all must learn what the law is, no intelligent common-law lawyer will dispute. Our very treatises and text-books derive from the cases they quote all the authority they have.' If the authority of treatises and text-books is derived from the cases, then the treatises and text-books must be derivative, while the cases are the original sources; and he who consults the text-book as a substitute for the cases gets his information at secondhand. It was to emphasize this fact, I take it, and not to belittle the value of treatises or to speak disparagingly of the authors thereof, that the leader of the New York bar, Mr. James C. Carter, in his advocacy of the case system, spoke of students studying thereunder obtaining their knowledge from the original sources, while he, as a student, studying under the text-book system, was compelled to get his knowledge at

secondhand. It has been suggested, in opposition to the case system, that a student in natural science would not be expected to study simply by examining a specimen, without any further explanation, the inference being that a case is no more significant to a student of law than a specimen would be to a beginner in science. It is submitted that the illustration is not in point. To make the illustration apposite, one must suppose that the student in natural science has a choice of studying in one of two ways—either by taking the specimen, which is regarded as establishing some great truth in natural science, and taking with it the memoir of the discoverer of the fact or principle and studying the specimen in the light of the memoir or, on the other hand, discarding the memoir and specimen and taking instead the deduction that some writer has drawn from an examination of the specimen and the study of the memoir. Under the approved methods of to-day the student would be referred to the specimen and to the memoir, if accessible, and not to the opinion that some writer has expressed about them. In other words, he uses both a laboratory and a library. Now the case is, to the student of law, both a laboratory and a library. The facts of the case correspond to the specimen, and the opinion of the court announcing the principles of law to be applied to the facts correspond to the memoir of the discoverer of a great scientific truth, and constitute the library. If I may borrow a simile and change its application, the facts of the case correspond to the apple which suggested to Sir Isaac Newton the law of gravitation; the opinion is his organon. For the suggested analogy of putting a specimen into the hands of the student of natural science, to be applicable to the case system, one must suppose the student to be given the bare facts of the case, without the opinion of the court. The bare facts of cases are given to the student at the end of a course to test his knowledge of the subject. The facts of a case, together with the opinion of the court, are given to the student during his course to enable him to prepare himself in advance for the exercise of the lecture room and to acquire by the study and discussion thereof, together with the aids hereinafter suggested, a scientific and practical working knowledge of the fundamental principles of law.

"It has been suggested that the study of cases as the basis of instruction in law is founded on the idea that we have no jurists. Such, however, is not the case, the system of teaching law by cases being based solely on the idea that in law, as in other sciences, when the sources from which writers have drawn their conclusions are equally accessible to the student as to the writer, it is better to have the student study in the original sources, under proper direction and assistance, than to study in the first instance conclusions which are merely derivative. Furthermore, it must be remembered that in a system of law where a judge renders not simply a judgment for the plaintiff or the defendant, but delivers an opinion stating the reasons for the conclusions reached, judges are not simply magistrates, but jurists. But it may be asked, If each case contains such an elaborate explanation of the principles of law applicable to the facts of the case, what advantage has the study of cases over the study of a treatise dealing with the same subject?

"The objection to the use of the treatise is that the student who takes up a textbook immediately finds the results of another's labor, and receives that other's conclusions without participating with him in the process which has enabled him to produce the result. The book may be a book consisting of general principles simply, or a statement of principles illustrated by the author's own statement of the cases on which he bases his conclusions. If it is a book containing a statement of principles simply, a student labors under the disadvantage of having put before him a body of rules pertaining to an applied science, and he not only labors under the disadvantage of being simply a recipient of results without going through the processes by which they were reached, but the rules are almost meaningless to him, for the reason that they are nothing more than abstractions. If the book contains not only a statement of the principles, but also a statement of cases by way of illustration, it is still open to the objection that he is merely receiving results, and the

illustration serves simply to corroborate the statements and explain the meaning of the writer, and does not enable the student to apply the principle to cases involving the same principle of law but differing in their facts, for the reason that the author, having summed up the law and stated in advance the conclusion reached as a matter of law, no opportunity is given the student to exercise his judgment as to the result that should be reached on the facts placed before him. The mind of the student who studies under the text-book system has been compared to a sponge. My own opinion, formed after much observation of students who have studied under the text-book method, is, if one is to judge of their knowledge from their ability or inability to apply the rules to the cases that may be suggested to them, that the mind of such a student is much more sieve-like than sponge-like. And does not this statement appeal to the experience of men in all the affairs of life? How is it possible for a man to work out a difficult problem of any kind whose only preparation for the work consists in having had certain results stated to him and certain illustrations of the meaning thereof given him? Is it not our experience, all through life, beginning with childhood, that we understand most thoroughly and remember longest that which we have acquired as a result of labor on our own part? How many students will do independent thinking and critical reading while preparing twenty pages of Parsons on Contracts for a lecture? But suppose you take the same subject-matter, and instead of giving him Parsons's treatment thereof you put into the student's hands a few cases involving the principles, but contradicting each other in many particulars, and perhaps reaching opposite results. Can a student capable of thought fail to think, and, having thought, whatever his conclusions may be, will not the lecture that he attends, where he will have his conclusions either confirmed or questioned, mean more to him and produce a more lasting impression? Can anyone imagine any subject dependent upon and involving human reason where the consideration and discussion of a question, in advance of the announcement of certain results, would not lead to a better understanding and more lasting impression of the subject under consideration? To quote from an address of Mr. Justice Holmes, of the Massachusetts supreme court, an earnest advocate of the system, though not trained under it as a student: 'Does not a man remember a concrete instance more vividly than a general principle? And is not a principle more exactly and intimately grasped as the unexpressed major premise of the half-dozen examples which mark its extent and its limits than it can be in any abstract form of words? Expressed or unexpressed, is it not better known when you have studied its embryology and the lines of its growth than when you merely see it lying dead before you on the printed page?'

"The advocates of the case system believe, to quote from the same authority, that 'to make a general principle worth anything you must give it a body; you must show in what way and how far it would be applied actually in an actual system; you must show how it has emerged as the felt reconciliation of concrete instances no one of which established it in terms. Finally, you must show its historic relations to other principles, often of very different date and origin, and then set it in the perspective, without which its proportions will never be truly judged;' and that students should not be sent forth 'with nothing but a rag bag full of general principles, a throng of glittering generalities like a swarm of little bodiless cherubs fluttering at the top of one of Correggio's pictures.'

"How does the practicing lawyer of to-day, investigating a question with a view to preparing an opinion or writing a brief, inform himself? Is it by reading a text-book and seeking to understand the author's point of view in the light of the illustration which an author may use, or does he use the treatise much as he does a digest, for the purpose of finding the original sources, the examination of which, when found, constitutes his real work and enables him to deal with the subject under consideration? No one will question that the latter is the method by which the successful lawyer of to-day accomplishes results. And if this is the way in which

the lawyer needs to inform himself, why should not the same method be used by the student? No one would condemn more severely than the believers in the case system the indiscriminate reading by students of a mass of unclassified decisions. Under the case system, however, the student is not referred to a mass of cases nor to an unclassified list of cases. He is, in fact, referred to a few classified cases, selected with a view to developing the cardinal principles of the topics under consideration. In other words, under the case system the student is given the material to which both lawyers and judges resort, but his investigations are made under the direction and with the assistance of his instructor.

"If the student were given only cases which, from the instructor's point of view, were correctly decided, the study of cases would be more like the use of a text-book containing illustrations of principles; but even then the case system would offer this distinct advantage, that the student would be required to express in his own language the material facts in the case and the exact principle which the court considered necessary to the decision thereof, whereas in the text-book system, if the author has been successful in his work, the student finds it done for him. In truth, however, the attempt is made, in selecting cases for the use of the student, to present the same principle from many points of view, as involved in the same or different facts and as considered by different minds, and the decision may be good or bad in principle, and may or may not be recognized as law. The student is thereby forced, not only to analyze cases, but to compare them, to discriminate and choose between them. The incentive for sound thinking, in advance of the exercise of the lecture room, is the fact that his opinions are subject to review in the class room, and will be made the subject of criticism by both the students and the instructor. The exercise in the class room consists in a statement and discussion by the students of the cases studied by them in advance. This discussion is under the direction of the instructor, who makes such suggestions and expresses such opinions as seem necessary. The student is required to analyze each case, to discriminate between the relevant and the irrelevant, between the actual and possible grounds of decision, and, having thus considered the case, he is prepared and required to deal with it in its relation to other cases. In other words, the student is practically doing, under the guidance of the instructor, what he will be required to do without guidance as a lawyer. While the student's reasoning powers are being thus constantly developed, and while he is gaining the power of analysis and synthesis, he is also gaining the other object of legal education, namely, a knowledge of what the law actually is.

"I spoke at the beginning of this paper of the conservatism of the bar, explaining in part the opposition that has been raised to the teaching of law by the study of cases. I think, however, an examination of the objections that have been raised to this method will establish that the opposition is almost entirely due to a misunderstanding as to the use made of the cases, and the object sought to be attained by their use. We are told, for example, by the opponents of the system, that the teaching of law by cases may make men academically learned in the law as a science, but will not make lawyers. Again we are told that the case system is vicious, for the reason that it makes simply case lawyers. Now, it is an impossibility for a man to be academically learned in the law as a science, and at the same time to be nothing but a case lawyer. The truth is, that one of the great arguments in favor of the case system is that it deals with both the scientific and the practical side of law. In so far as it deals with the scientific side of law, compelling the student to search for and apply the great and fundamental principles of law to the actual affairs of life, it prevents his becoming a mere case lawyer—a case lawyer being one who has a great memory for cases and their facts, but little apprehension of the principles governing the decisions. While the study of principles, which is the essential feature of the case system, is inconsistent with the production of a case lawyer, the fact that the student in studying a principle is required to study it in its growth and development as found in its application to the actual affairs of life fur-

nishes a complete check upon any tendency to become speculative and visionary, or academically learned, as distinguished from a scientific lawyer capable of applying the principles of law as they exist, and suggesting improvements therein.

"In the opinion of those who believe in the case system it is the study of principles in the abstract, and not in the concrete, that produces the man simply academically learned, and it is the use of cases by the students not as sources of the law, but as illustrative merely that produces the case lawyer. When the cases are studied, not by way of illustration, but as the sources of law, the danger to guard against is not that the student may become a case lawyer, but that he may not have a sufficient regard for cases which, in his opinion, are not well founded in principle.

"The statement that the system tends to make a case lawyer is founded on the radically erroneous idea that the object of putting cases in the hands of the students is to have them memorize the cases, as distinguished from analyzing them. A student is only required to charge his memory so far as is necessary to enable him to deal intelligently with the case in the discussion and consideration thereof in the class room, and he is advised, certainly, by many teachers under the system, to reduce the strain on his memory to a minimum by making his own headnotes with which to refresh his memory for the exercises of the class room. In other words, the case is simply material from which a principle is to be extracted.

"It is not to produce a man academically learned that the study of law by cases is urged, but because it is believed, to use the language of Mr. Dicey, 'that to master the rules of English law you must study these rules as applied to the affairs of life;' that 'the lawyer or student who really enters into the results of a line of leading cases learns more than a few verbal maxims which may be committed to memory;' that 'he sees what is the true meaning of legal doctrines when applied to facts;' that he 'becomes', as Mr. Finch well expresses it, 'familiar with the tone of thought, the attitude of mind which prevails in our courts;' * * * that 'he learns, in short, by the only method by which it can be learned, the notion of justice which the lawyers and judges of England have developed by labors extending over centuries, and have impressed upon the minds of the English people.' What Mr. Dicey says of English lawyers and judges is, of course, equally true of American lawyers and judges.

"The objection that the student, under this system, is taught to regard law as a mere aggregation of cases, is simply another way of stating that the system produces case lawyers, and is disposed of by what I have just said.

"As the cases are selected to develop a particular branch of law, nothing is more erroneous than to suppose that the system consists of the study of isolated propositions. To say that the study of cases is only the study of isolated propositions, is to deny that the law has been developed through the cases.

"No sane man would hesitate to denounce a teacher who should refer a student to a law library and expect him to find for himself cases developing the law of a given subject and to deduce the principles therefrom unaided. Yet the objection so often raised, that it is absurd to plunge a beginner into a chaos of undigested and unclassified matter, and to expect him to arrange and classify the cases and to deduce the principles therefrom by himself, would lead one to believe that the case system involved this absurdity. The objection, however, is born of ignorance. The most casual examination of the collection of cases used in teaching law by this method will show that the winnowing process is done for the student, his material being selected for him and classified with reference to topics by chapter and by section and subsection when necessary.

"The objection to the case system, that it requires of a tyro work which can be done only by a qualified critic or writer, would have some force if the material were not made the subject-matter of discussion and conference with the teacher in charge of the subject. The objection proceeds on the false assumption that the student, instead of having the benefit of an interchange of opinion and the advice and sugges-

tion of the instructor, is required to deduce, unaided, the principles and conclusions which he is to use as a practicing lawyer. As to the actual ability of the student to deal with the material in the manner in which he is required to deal with it, the testimony of a man who has administered the system and has had, therefore, an opportunity of observing the working thereof in this particular, should have great weight. Fortunately, are we able to produce as a witness on this point a man who, though at the time he gave his testimony was on the bench of the Massachusetts supreme court, had, prior to that time, qualified himself to speak of this system in its working operation by administering the same as a teacher. In the address, to which I have before referred, Mr. Justice Holmes says: 'With some misgivings I plunged a class of beginners straight into Mr. Ames's collection of cases. * * * The result was better than I even hoped it would be. After a week or two, when the first confusing novelty was over, I found that my class examined the questions proposed with an accuracy of view which they never could have learned from text-books and which often exceeded that to be found in the text-books. * * * My experience as a judge has confirmed the belief I formed as a professor.' The testimony of this disinterested witness, so well known both to the American and English bar as a distinguished writer and judge, should certainly outweigh merely theoretical objections.

"It seems hardly necessary to notice at the present day, when discipline is regarded as a part of legal education, and when, therefore, a student is supposed to be better prepared to grapple with problems because of previous study, the objection that, as a student is a beginner as to every new topic, the case system should not be used by him at any time during his course, but that the work involved therein should be done by him after he has become a lawyer.

"It has been objected to the case system that it proceeds on the theory that the law is an exact science, and those urging this objection assert strenuously that such is not the case. With the assertion that law is not an exact science I think all will agree, but that there is any dependence in teaching law by cases and its being an exact science I fail to see. That law is a science is claimed by the advocates of the case system, and, I trust, not denied by its opponents. But it is an applied science, depending for its exactness upon human reasoning, and is not, therefore, one of the exact sciences; yet, I trust, for all that, not the less worthy of scientific study.

"The objection that the case system proceeds upon the study of old cases to the exclusion of modern cases is based on a delusion which can be cleared up by a casual examination of the various selections of cases used by the student. That the student is required to consult old as well as modern authorities is true. He is required to do so in order that he may know something of the growth and development of the law, and thereby the more thoroughly prepare himself to deal with the problems arising from our present complex civilization.

"The objection has been raised to the case system that only the unsettled points of law are treated thereunder. This, of course, is simply a statement of fact, and, as in the case of the delusion I have just referred to, can be readily removed by an examination of the material which is placed in the hands of the student. Another objection which has been raised to the system is that it requires more time than the text-book system in which to cover the field of law. If this statement is to be taken as meaning that more topics can be touched upon in a given length of time under the text-book system than are considered in the same time under the case system, the statement is true. But if the statement is to be taken as meaning that in the same length of time more law can be mastered under the text-book system than under the case system, the assumption begs the entire question, and is most emphatically denied. The advocates of the case system believe that the system produces a lawyer more quickly than the text-book system, for the reason that, in their opinion, the powers of analysis, discrimination, and judgment which have been acquired by the study of cases by the student before graduation must be acquired by the student of the text-book system after he has ceased to be a student and has become a practicing lawyer.

"The objection to the case system that it logically demands the examination and

discussion of every case of record, case by case, loses sight of the fact that, according to the best thought of the day, while the adjudged cases are numerous, the controlling principles are comparatively few.

"It is unnecessary to consider whether law can be taught exclusively by cases, for the reason that I know of no teacher who has made the attempt. Speaking for the Columbia College Law School, with which I have the honor to be connected, I may say that in all of the courses where the case system of instruction is followed—and it is practically the system by which all the instruction in private or municipal law is given—text-books are used and oral instruction is given. The distinctive feature of the case system is not the exclusive use of cases, but that the reported cases are made the basis of instruction, where in other schools they are referred to, if at all, by way of illustration only, and that text-books, which in most schools are made the basis of instruction, are used for purposes of reference and collateral reading, and to enable students to compare their own generalizations with those of the authors of standard works.

"One occasionally, but seldom in this day of advanced thought and education, hears the objection raised to the case system that it does not make the study of law easy for the student, and partaking of this objection is the suggestion that the province of the teacher is to teach. Of course, these objections raise squarely the question as to the burden that should be put upon a pupil and of the work that should be done by a teacher. We admit that the system does not proceed on the idea of 'the law made easy.' We believe the law to be a difficult science, which can be made easy only at the expense of thoroughness and, therefore, at the expense of the student. We believe that the information which the student receives should be the result of thought and effort on his part. As Mr. Gray has well expressed it, 'The greatest teacher the world has ever known was fond of comparing himself to a midwife. His task, he said, was to aid the scholar to bring forth his own ideas. He, to-day, will be the most successful teacher who can best exercise this obstetrical function. And in law no better way has yet been devised to make the student work for himself than to give him a series of cases on a topic and to compel him to discover the principles which they have settled and the process by which they have been evolved.' Of course, this represents a difference of ideas, and each person will choose that one of the two which more strongly appeals to his experience and common sense.

"To summarize: The reasons that I would urge for the adoption of the case system of instruction are, first, that law, like other applied sciences, should be studied in its application if one is to acquire a working knowledge thereof; second, that this is entirely feasible, for the reason that while the adjudged cases are numerous the principles controlling them are comparatively few; third, that it is by the study of cases that one is to acquire the power of legal reasoning, discrimination, and judgment, qualities indispensable to the practicing lawyer; fourth, that the study of cases best develops the power to analyze and to state clearly and concisely a complicated state of facts, a power which, in no small degree, distinguishes the good from the poor or indifferent lawyer; fifth, that the system, because of the study of fundamental principles, avoids the danger of producing a mere case lawyer, while it furnishes, because the principles are studied in their application to facts, an effectual preventive of any tendency to mere academic learning; sixth, that the student, by the study of cases, not only follows the law in its growth and development, but thereby acquires the habit of legal thought which can be acquired only by the study of cases, and which must be acquired by him either as a student or after he has become a practitioner, if he is to attain any success as a lawyer; seventh, that it is best adapted to exciting and holding the interest of the student, and is therefore best adapted to making a lasting impression upon his mind; eighth, that it is a method distinctly productive of individuality in teaching and of a scientific spirit of investigation, independence, and self-reliance on the part of the student.

"So far I have considered methods only in the abstract, entirely eliminating

what, in practice, can not be eliminated, namely, the personal equation. I am free to say that, in my opinion, the case system requires a higher order of intelligence on the part of the pupil than is required under the text-book system, but it does not require a higher order of intelligence than should be possessed by anyone aspiring to become a lawyer. Not only must the personal equation be considered with reference to the pupil, but the personality of the teacher is of the greatest importance in any system of education. I fully appreciate that what is meat for one may be poison for another. Any given teacher, because of his peculiarities, might succeed with a method inferior to another under which he would fail, and for this reason, every instructor in law in Columbia College has, and I hope always will have, absolute freedom of choice in his methods of teaching. But, from this point of view, an argument which can be fairly urged in favor of the case system is that the method of teaching involved therein is so flexible that two men may use it as a basis of instruction, and the teaching of the one hardly suggest the teaching of the other.

"I agree entirely, however, with the statement made by Professor McClain before this body last year, that 'Each successful teacher has his own peculiarities growing out of his personal relation with his surroundings, and any attempt on the one hand to copy the particular method of another, or, on the other hand, to put a trade-mark upon peculiar ways of teaching, will necessarily prove abortive.'

"Garfield's definition of a university was a pine table, with Mark Hopkins at one end and the student at the other; but it was Mark Hopkins and the personality of Mark Hopkins, which could not be transmitted to another, and not the table, that attracted Garfield. Rugby had its Arnold, but Arnold died, and with him his personality.

CHAPTER VIII.

EDUCATION OF THE COLORED RACE IN INDUSTRY.*

The financial history of the larger institutions for the education of the colored race is epitomized in the case of the Tuskegee Normal and Industrial Institute of Alabama. That institution, on the 4th of July, 1881, started in the world without a dollar except an annual appropriation of \$2,000 from the State for tuition of State students. During the thirteen years that have elapsed since that date the institution has received \$421,956 in cash, derived from the following sources:

The State of Alabama, about 9 per cent, or	\$37, 000
The Peabody fund, about 1 per cent, or	5, 163
The John F. Slater fund, about 4 per cent, or	15, 500
The students, about 12 per cent, or	51, 451
Gifts, about 74 per cent, or	312, 842

Total for the thirteen years..... 421, 956

Of the above amount about 44 per cent, or \$187,613, was paid for student labor between 1881 and 1894.

Reduced to its essential element, the whole matter is "student labor," paid for by benevolent people and done in buildings and fields, provided by these same kind-hearted persons for the purpose of enabling the negro youth to acquire an education without loss of self-respect.¹ Indeed it may be said that the necessitous condition of the negro and the idea of self-helpfulness are the magic notes that have drawn so many millions from, more especially, the North, to effect his education. But this, so to speak, incidental idea of manual labor in exchange for an education rapidly became the general principle, that the education of the negro is to be best effected through systematically teaching him to labor. Thus "student labor" is no longer at this epoch of the education of the colored race a means to an end, but is an end, if not the end. The same phenomenon may be observed in older and more stratified societies than our own, and it is the wish of the Commissioner to have presented the character of the technical equipment and course of instruction of the institutions interested in the effort to teach the negro the dignity of labor.²

In applying to the negro in America a course of trade instruction such as has never been in general systematically or successfully operated in schools for the whites in this country,³ it is a question how far methods that in the past have failed, or the newer so-called "manual-training" methods are applicable to the colored race. Unmistakably there is abroad at the present time an idea that in regard to

¹ Students must pay in advance \$5 a month for board. * * * The school endeavors to give each pupil \$5 worth of work monthly, which in most cases able-bodied persons can earn.—Catalogue Hampton Institute, p. 58.

² The object of this institution is, "First, to teach the dignity of labor."—Many catalogues.

³ The New York trade schools are not an exception, for their work is completely divorced from mental training.

* By Mr. Wellford Addis, specialist in the Bureau.

the mental training of the negro there must be "appreciated one important and far-reaching fact—a fact that has been too generally overlooked by those charged with the education of the negro—namely, that the curriculum and methods employed in the instruction of the white race need essential modification and adaptation in their application to negro schools," for in the education of the negro, it is necessary to have a "practical knowledge of his peculiar intellectual difficulties and a sympathetic appreciation of his moral weaknesses."¹ Now, if we substitute for the "intellectual difficulties" and "moral weaknesses" to be considered in the mental training of the negro the hereditary aptitudes for certain kinds of labor possessed by him, the conclusions of an official of the last census will bear upon the line of least resistance for imparting the idea of the dignity of labor or self-helpfulness. These conclusions are—

"The proportion of the negroes in the cities [of 8,000 population or more] has in every case been less than that of whites, though their proportionate increase has been greater than that of the whites. This gain is, however, very slight, and is probably not significant. While the negro is extremely gregarious, and is by that instinct drawn toward the great centers of population, on the other hand he is not fitted either by nature or education for those vocations for the pursuit of which men collect in cities; that is, for manufactures and commerce. The inclinations of this race, drawn from its inheritance, tend to keep it wedded to the soil, and the probabilities are that as cities increase in the United States in number and size and with them manufactures and commerce develop, the great body of the negroes will continue to remain aloof from them and cultivate the soil, as heretofore."²

Whether hereditary inclination, early association, or social antagonism will keep the negro wedded to industrial isolation as a small farmer, it is undoubtedly a fact that his longings are away from the farm, as are those of the youth of the white race, and probably for the same reasons; both having seen so much of its worst side before experience had taught them to recognize the better. This tendency away from the farm has been ascribed to the quickening of the intellectual operations and the birth of high aspirations due to an elementary education, but instead of counteracting it by agricultural instruction, in the case of the negro the greatest weight is being put upon industrial instruction, as will appear in the sequel, for which vocation the negro "is not fitted either by nature or education," according to the authority quoted above.

Taking the negro in his present industrial condition as more at home on the soil than in the alleys and back streets of cities and towns, it will be best to examine into the character of the instruction which is intended to fit him for his ancestral vocation, then into that which fits him for village or cross-roads industries and those of the shop or foundry.

Before presenting these topics, however, the recent establishment of the Shorter University at Arkadelphia, Ark., requires mention. This institution, as yet a university only in plan, owes its existence to the policy of the African Methodist Episcopal Church to establish schools in every State where its membership is very large. The progress of the school under its original name of Bethel Institute is due to the active service of the ministers and members of the African Methodist Episcopal Church in Arkansas, who have given labor and money to promote "liberal learning" within its territory among the colored race. The prospectus is quite guarded in its reference to industrial education, the new university "aiming to give ample preparation to young men and young women for personal success and usefulness, and endeavoring to correct the effects of too great specialization on the one hand and extreme diffusion on the other."³

¹ Report of Commission of Visitation to Tuscaloosa Institute for Training Colored Ministers, Third An. Rept. of Ex. Com. to Gen'l Ass. of Amer. Pres. Church, pp. 13, 14.

² Statistical Sketch of the Negroes in the United States, p. 16, by Henry Gannett, published by Slater Fund.

³ So also Fisk University.

TRAINING IN AGRICULTURE.

In the teaching of agriculture in the colleges for the colored race science—chemical, physical, or botanical—and nonremunerative practice have been in the position of vowels and consonants in the science of philology of the eighteenth century, in which, according to Voltaire, consonants went for very little and vowels for nothing at all. The fact of the matter is, that schools having large farms must, under the stress of the necessity of supporting the simple-minded, confiding proletarians who crowd to their halls, use their fields to support their charges as well as to educate them within the walls, though the latter purpose is the essence of their being. The value of the strength of the would-be educated field hand in tilling the scholastic acres is obvious, and it is probable that those acres have been increased in order that the clients of the institution to which they belong might be more numerous and thus more colored people educated.

Let it not be supposed, however, that the management of the several schools are purposely ignoring that agricultural phenomena and operations have an interesting and intelligible explanation systematically digested into a body of doctrine called science, which is well calculated to enlarge the understanding and develop reflection. At several institutions, especially at those endowed with the national land-grant act of 1862, or the additional endowment act of 1890, an effort is being made to teach the scientific principles of agriculture. At the Hampton Institute, for instance, which is in reality a village of over a thousand people, the purpose of the department of agriculture is to give every boy in the day-school instruction in the elementary principles of farming, and to carry those who may so elect through a higher course, which will fit them to be teachers of agriculture and superintendents of farms. The equipment consists of the home and Hemenway farms. In order to produce milk and vegetables for the boarding department and hay and ensilage for the stock, 110 acres of the home farm are kept under cultivation. The Hemenway farm is devoted to grass, grain, stock, and dairy purposes. The farms have the necessary buildings for 75 cows, 50 horses, 500 swine, and a flock of sheep; the home farm having also two greenhouses, hot beds, etc., where boys and girls are taught the forcing of flowers and of vegetables. There are two courses: one elective and the other required. The required course covers a period of three years, one lesson a week being given to each boy of the normal school. This instruction deals with—

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| 1. The origin, formation, composition, and mechanical condition of soils. | 8. Cultivation of the crop. |
| 2. Composition of the plant. | 9. Manures and fertilizers. |
| 3. Plant food in the soil. | 10. Rotation of crops. |
| 4. Effect of water on soil and crop. | 11. Diversified farming. |
| 5. Drainage. | 12. Culture of the leading farm crops. |
| 6. Preparing the land for the crop. | 13. Fruit culture. |
| 7. How plants grow. | 14. Truck and kitchen garden. |
| | 15. Farm live stock. |

The boys taking the elective course receive five lessons instead of one during the week, and the above course is "greatly enlarged." For the elective students in the spring of 1894 a small experimental garden was carried on. This experimental work is to be enlarged and every theoretical principle of the class room is to be demonstrated as far as possible in the field.

Another well-considered course, though perhaps less theoretic, is given in the catalogue of the State Colored Normal and Industrial School at Normal, Ala. The curriculum is as follows:

First year: Soils, plants, animals, management and diseases of live stock, gardening.

Second year: Soils, dairying, manures.

Third year: Gardening, drainage, grain and grass growing, poultry, sheep and cattle raising, dairying, pruning, grafting, budding, bees, political economy.

The course of another institution, however, more accurately shows the character of the agricultural instruction given in the schools for colored people. The department of agriculture of this institution consists of a school of agriculture, which is

a farm of 150 acres, producing 1,000 bushels of corn, 1,200 bushels of potatoes, etc., and a school of horticulture (a new department) of 12 acres, planted in potatoes, sweet corn, turnips, etc. These schools furnish employment and experience to students and supply, at the market price, fresh provisions for the boarding department.

TRAINING IN INDUSTRIES.

The industrial work of the Hampton Normal and Agricultural Institute may be divided into three classes. The first of these is instruction in work from doing which no pecuniary profits arise to the student while in the school; the second is instruction in trades which may profit the student in money value, and the third is work in which the chief object is the self-support of the student while at the institution, such as the girls of the normal department do in the steam laundry and the boys of the night school do on the home and Hemenway farms, as mentioned under instruction in agriculture above. But as the organization of industrial training at the Hampton Institute is unusually complete, the aim of a large institution farther South is a better expression of the general character of industrial education as given in the schools for the colored. This aim is "to turn all labor and all articles produced by labor to advantage and utility. Therefore the industrial departments contribute in some way to the equipment of the institution, and they are in most cases a source of income to the student as well as a means of instruction."

Thus acquainted with the underlying principle of the industrial instruction, we may pass to its kinds and methods, noting as we proceed, the change in the character of the work being effected by the requirements of the trustees of the Slater Fund; to wit, that the underlying principle shall be instruction instead of remuneration.

PRINTING.

The institutions for the education of the colored race take kindly to the printing press; perhaps printing is a vocation strongly congenial to the colored man. Among the first industries introduced into a school for the negro is the trade of printing. Nothing could be more useful to institutions situated financially as these institutions were and are now, nothing certainly could be more alluring to the aspiring student than to become familiar with the processes for disseminating the necromancy of words; besides all this, as a trade it offers more opportunities of arousing the intelligence than all the other trades put together.

With a very few exceptions there is no large institution for the education of the negro that does not teach printing. At the Schofield School, established at Aiken, S. C., in 1868, the printing office is the oldest and most important department and for several years has been self-supporting, a fact very encouraging to the management, when consideration is made that there are three other printing offices in Aiken with which their press has to compete. Most of the trade of this school comes from the hotels and business houses of Aiken, but at the St. Paul Normal and Industrial School "jobs come to the Normal School press from all parts of the United States, the aim being to satisfy both in style and price of work, making the work of the printing office one of the best paying features of industry in the school at present." Still another instance of the diversity of the commercial value of the school printing office is afforded by that of Wilberforce University. From this department are issued the university circulars, letter heads, programmes, forms, rules, and general job work, the value of which for 1893-94 was estimated to be \$148.70. At the Norfolk Mission College the boys of the high school receive training in composition, typesetting, and presswork, thereby practically illustrating the rules of grammar and rhetoric while doing the college job work.

The course in printing is well attended. At Biddle University, out of 131 students in carpentry, printing, shoemaking, and bricklaying, 27 per cent were studying printing. At Wilberforce as many were in the printing office as in the carpenter

shop. At Central Tennessee College, out of 77 in 5 mechanical departments, 19 per cent were in the printing office. At Livingstone College 8 of the 15 students receiving a course in trades were in the printing office. At the Alcorn College 14 students entered the printing department the year of its introduction (1893), with 82 in the older carpenter and blacksmith courses. It should be remarked, however, that at Wilberforce and other institutions young women engage in this vocation.

The course in printing is probably the most thorough, and certainly the longest, at the Hampton Institute and its follower, the Tuskegee Institute. The course is four years in duration, ten hours a day once or twice a week being devoted to the trade. Special instruction is given in the class room, but outside of working hours, regarding stock, making estimates, and various other matters. In the first year general duty work is required, followed by instruction on job presses. During the second year instruction is given at the case on newspaper and book composition. During the third year there is general job work and book imposing. During the fourth year the teaching includes miscellaneous job work, proof reading, cylinder press work, tablet making, and the binding of check and order books. Applicants to learn this trade must pass an examination in reading, spelling, writing, and grammar. At Tuskegee Institute the course of training is three years, though the curriculum is of four. There the theoretical instruction is given from 4.45 to 5.30 p. m. The usual course, however, is of two or three years, and is very well shown by the curriculum of Wilberforce University:

First year.

First term: Printers' terms. Practice in fixed rules for punctuation. Use of appliances. Practice at case.

Second term: Plain composition. Measurement of type. Newspaper and job work begun.

Third term: Plain composition and job work continued. Estimating, grading measurement of paper and cardboard.

Second year.

First term: Bookwork begun. Casting off, making up, and locking forms.

Second term: Bookwork continued. Plain and ornamental job work.

Third term: Book and job work continued. Proof reading.

At Fisk University the class, which consists of 15 young men and 7 young women, gives one hour a day to the work, and students may remain in the class two years. At the State Colored Normal School of Alabama 11 per cent of the 134 students in 7 trades are in the printing department, three hours for three days each week for three years being devoted to acquiring the trade.

CARPENTRY.

The beginnings of the great schools for the colored race being hampered by the impecuniosity of the founders, as in the ultra case of the Tuskegee Institute, which was originally housed in an old negro church and a shanty, a corps of carpenters became necessary for the development of the school. The light character of timber construction employed in this country and the great facility with which all the more intricate portions of a building can be obtained, from a factory fitted up with appliances for the manufacture of sash, doors, and the other subordinate parts that give finish to a house, have enabled the schools for the colored race to reduce their expenses for building to a very great extent by using the muscle of the pupils. The benevolent gave money to be paid for student labor, the students at carpentry paid the institution the money they received, and the institution gave them tuition, board, and lodging, and in addition taught them carpentry and the dignity of labor very much in the same way that the apprentice boy is taught his profession and its dignity. Under the directive influence of the management of the John F. Slater Fund and the equally conclusive provisions of the act of Congress of August 30, 1890, granting the proceeds from the sale of public lands for the better endowment of colleges for the benefit of agriculture and the mechanic arts, another conception of teaching carpentry has been inculcated, in which there is, so to

speak, much less field work but much more preparation. Thus the most extensively followed trade taught in the class of institutions under review is being placed on a purely instructional basis, the State and the two funds above mentioned doing, or allowing other money to be used in doing, the institutional building.

The Hampton Institute is the only institution that makes a sharp distinction between the manual training (or Russian system of preparatory instruction) and trade teaching, other institutions more or less mixing the two ideas. Its course in manual training is put down as a branch of technical work, and is a course in the manipulation of wood, covering three years, while its course in carpentry, also of three years of ten hours a day, is a trade department, in which the primary object is the imparting of skill to the apprentice, and the secondary object his personal pecuniary gain. For purposes of comparison by those interested in distinctions which are based on a difference, the two courses are given in a footnote.¹ This remunerated work is, in the St. Paul Normal and Industrial School, paid for by a salary scheme. The carpentry department of that school is under a foreman of great practical experience as a housebuilder and joiner, and apt and industrious young men are salaried as follows: First year (probationary), board and washing; second year, \$50 and board and washing; third year, \$75 and board and washing; fourth year, \$100 and board and washing. These salaried persons work through the day and attend the night school. They have erected all the school buildings and a number of valuable buildings for the public.

The "manual training" course as put in operation in the Hampton Institute is due to the Slater Fund trustees. The institutions having instruction of the kind are Tougaloo University, Straight University, Orange Park Normal and Manual Training School, Atlanta University (first year), Howard University, and probably Fisk University. But with these exceptions the majority of the institutions have only the "trade course" of the Hampton Institute, though the splendid shops of that school may give its students advantages of familiarizing themselves with machinery not possessed by less favored institutions.

The course of Clark University is unique and well worth reproduction. Its prin-

¹ *Manual training course.*

(Three years.)

This course is to give practice in the ordinary processes and principles which enter into construction in wood. The course is given to all the boys not taking trades and the girls of the middle normal class:

Measuring on a plane surface with rule and knife. Squaring with try-square and knife. Gauging with thumb gauge. Sawing to a line with back saw. Planing to a true surface. Testing with square and by sight. Planing to size squarely and truly. Planing ends with block plane. Lining rough lumber with straightedge and line. Ripping with saw. Making half joint, or box halving. Making dado, or cross groove. Nailing butt joints. Mortise and tenon. Boring, doweling, etc. Making joints fastened with screws, rivets, and bolts. Clinch nailing. Gluing. Making a smooth surface. Grooved work. Miter joints. Irregular bevels. Dovetail and scarf joints. Laying out and sawing curved lines. Putting together curved work. Bending by sawing and by steaming. Articles are occasionally made, but training in principles after models is the object. There is also taught: Tools, their names, etc. Materials, character, etc. Principles of wood construction. Terms. Measuring lumber. Bill of materials. Reading plans.

Carpentry course.

(Three years, ten hours a day.)

First year. One month's technical instruction and practice in the use of tools. Assisting more advanced students in filling orders, at the lath, scroll saws, tenoner, mortiser, and borer.

Second year. Instruction and practice in operating one or more of these machines. Instruction and practice in regular bench work. Making window and door frames, sash, doors, and mantels. Instruction in drawing.

Third year. Instruction and practice in more advanced carpentry work. Instruction in architectural drawing. Practice in working from detail drawings.

To those who show special fitness for it instruction is given in cabinet work, stair building, wood carving, or designing.

Blackboard exercises with explanatory talks relative to the work are given each week.

Carpentry is also taught in the repair shop. Much new work in building (upon the grounds of the institution) and in furniture making is also done, affording valuable practice,

cial heads are experiments and lectures, woodworking, ironworking, carriage painting, harnessmaking, and printing. There is a clear ring to its apparently especial adaptation to carriage building.

EXPERIMENTS AND LECTURES.

1. Strength of materials.
 - a. Arrangement of materials for greatest strength.
 - b. Methods of joining together timbers, plates, etc., to give least per cent of lost strength.
 - c. Selection of materials.
 - d. The foregoing as applied to wagon making, truss work, house building, bridge work, etc.
2. Powers.
 - a. The lever.
 - b. The wedge.
 - c. The screw.
 - d. The foregoing as applied to animal, wind, steam, and electric power.
3. Friction.
 - a. The drag.
 - b. The wheel.
 - c. The inclined plane with various materials.
 - d. The foregoing as applied to air, water, machinery, etc., special attention being devoted to the draft of vehicles on soft and hard roads.

WOODWORKING.

1. Name and use of tools (on waste lumber).
 2. Making joint from drawing.
 3. Making joint from pupil's own drawing, repeated until a certain degree of perfection is acquired and command of tools attained.
 4. Making plain, straight vehicle body and gear from specification, also making design to give required strength with least outlay of material and labor. Estimate of cost.
 5. Making complete set of geometrical figures.
 6. Tracing out projections of different combinations of geometrical figures.
 7. Circular joint making from pupil's own drawing.
 8. Curved and paneled body making from pupil's own design. Estimated cost.
- Elective: Wood turning and wood machine work. Wood and scroll design. Pattern making. Cabinetmaking.

IRONWORKING.

1. Use of tools and forge on waste iron.
2. Plain welding, upsetting, and drawing out iron; staple, hasp, and bolt making; scroll, spiral, and curve bending from drawing.
3. Joint and tool making from pupil's own design.
4. Ironing of plain vehicle from specifications furnished, making the design to give proper strength to each part with the least weight of material. Estimate of cost.
5. Making complete set of geometrical figures.
6. Tracing out projections of different combinations of geometrical figures.
7. Jump welding, scroll cutting, and ornamental work from pupil's own design.
8. Ironing of carriage from pupil's own design. Estimate of cost.

Course.—Every young man above the age of 16 and below the college classes is required to devote two hours per diem to manual training, consisting of theoretical and practical work. Pupils are required not only to construct miniature models, but products for the market as well, and are thus prepared for the struggle of life should no professional position open to them.

The Claflin University makes a division of its carpentry department into a "school of woodworking" and another of "woodworking by machinery." In the first a variety of actual work is performed, such as building cottages, shops, repairing buildings, furniture, fences, and agricultural implements, and in the second the work of a sash and furniture factory has been carried on.

The industrial organization of the Hampton and the Tuskegee institutes is so complete as to embrace a sawmill. At Hampton this feature is considered as an "industry" (primarily remunerative to the student) and though the employee may learn the handling, drying, grading, and measuring of rough lumber, the industry does not seem to be considered a trade as at Tuskegee, where there is a "course of

study in sawmilling" which seems to be very much the same as what may be learned at the Hampton Institute except the felling of timber which is cut for Hampton Institute in North Carolina and floated up in rafts. At Claflin University there is a grist-mill. Both of these departments, however, may be looked upon as having been introduced more for their utility to the institution than to add to its industrial equipment.

WHEELWRIGHTING.

This is a special form of carpentry, and is with two exceptions treated as belonging to that department. It is by no means so numerously followed as carpentry nor have nearly as many institutions introduced it as have introduced woodworking. At Tuskegee the course is coupled with carriage trimming, and at Hampton with the making of farm implements, or the wooden portion thereof; at Clark University the course in wood and iron working, and painting, seems to be a special course in carriage and wagon building.

BLACKSMITHING OR METAL WORKING.

This trade follows carpentry in point of numbers in the nine institutions which have introduced it as an isolated course. The subject is taught in thirteen institutions, seven of which receive an annual apportionment from the endowment fund of 1890, called the Morrill fund. The cost of erecting a forge and of the accessories necessary to equip it and the cost of maintenance have prevented the general introduction of metal working to any great extent until a very recent date.

Among the institutions having a course in metal working that of the Central Tennessee College is eminent for its completeness and duration. At Hampton the course is carried on in the Pierce machine shops and follows three lines: Blacksmithing and horseshoeing; blacksmithing without horseshoeing, but with use of power machinery; and machine work. Each course is of three years, ten hours a day for at least one day in the week. As may be readily inferred from their titles, the first course is adapted for a village blacksmith, the second for a hand in an iron foundry, and the third for a machinist. The first course with horseshoeing very well represents the course in the majority of the schools, though much "forge" and machinist work is frequently included.

There are three institutions—Tougaloo, Atlanta, and Arkansas industrial universities—in which ironwork follows in natural sequence after instruction in the more easily manipulated wood. At Tougaloo the instruction in woodworking is given to the 4-8 grades and in forging to the 7-9 grades for one and one-half hours each day with the object of general culture of the mind and hand. With the same object and allotment of time Atlanta University introduces ironworking in the second year of its mechanical course, following it in the third year with exclusive attention to mechanical drawing, and in the fourth year with pattern making and machine-shop work. To enable a young man to choose his trade intelligently and to acquire a sound basis for it the Arkansas Industrial University (in its colored department) has a course in general shop work extending over three years.

SHOE AND HARNESS MAKING.

We have, says the Wiley University, more applicants than we can accommodate in the shoe shop; it is a practical work and should be provided with better facilities. By doing all the work for the students and professors, says another institution, ample opportunity is given for making this branch of the work thoroughly practical. The course is usually of three years, and is very succinctly given by Benedict College as follows:

First year, making and mending coarse shoes.

Second year, making and mending fine shoes.

Third year, cutting and finishing.

Harness making is carried on in several institutions, and is reported by one school to be quite remunerative to the shop and useful to the farms of the institution.

Such are the principal features of the industrial organization of schools for the education of the colored race. The equipment of those schools has been greatly improved during the last few years, receiving an impulse from the attempt during the last half of the 80's to add industrial training to the public schools and the consequent elaboration of plans for trade instruction of the Caucasian. In the case of the negro a more humble subject was found, and to him the system is being more and more thoroughly applied. The effort of those who direct this application is to change the old system, which in some measure sacrificed the future welfare of the pupil to the present necessities of the institution, to one of less economic value to the school, but also less selfish as concerns the pupil. Such a change, however, involves financial questions regarding the source of support of these institutions and adaptation of aims to means that are well worthy the deepest consideration of the innovators.

A few pages back we have seen that a very able statistician has thought the negro to be unadapted to commercial pursuits. In the large sense of marine trade or great wholesale transactions this judgment is possibly correct, but for shopkeeping the negro who has received a good common-school education is eminently fitted, being bold, confident, and not less "sharp" than the business ethics of his locality imperatively demands. It is therefore preferable to note the progress which "business education," so called, is making in schools for the colored than to describe the courses of bricklaying and making, tinning, tailoring, etc., which this or that institution has introduced for the purpose of building its structures and teaching the dignity of labor. In passing to this topic, however, we note the absence of a course of instruction in weaving—a trade especially adapted to the great cotton-growing region of the world—among the industries taught at the class of institutions of which we are speaking. Such a school is in successful operation in Philadelphia, and that of Chemnitz in Saxony is a model that can not be surpassed here until after years of organization.

A highly organized business course was established at Wilberforce University in the fall of 1893. It had its origin in a desire to meet the growing demand for a more direct and practical education for business and everyday life. The course is as follows:

"Commercial arithmetic, practical grammar, bookkeeping, commercial correspondence, commercial law, rapid calculations, business methods and practice, public speaking, and, incidentally, rhetoric, parliamentary proceedings, civil government, political economy, business habits, etc. Shorthand and typewriting courses are also offered."

Typewriting and phonography, one, or both, are also taught in four other institutions, two situated in large cities, the others being the St. Paul Normal and Industrial School and the Orange Park School. The Colored Normal School of Kentucky has a business course of two years, which unites the studies of a secondary school to those of the business course of Wilberforce University.

In conclusion, it may be of interest to the reader to know how all this industrial work advances hand in hand with the imparting of the elements of a thorough common-school education, and to gratify any curiosity as to the correlation of the two processes the following facts are given:

At Shaw University, in addition to the four hours required to be spent at one of the trades daily for three years, these studies must be pursued:

First year. Reading, spelling, writing, and mental arithmetic.

Second year. Writing, arithmetic, geography, and drawing.

Third year. Arithmetic, grammar, and mechanical drawing.

At Clark University students in trades are given a two-hour lesson each day from 2 to 4 p. m. At the Alcorn College students are divided into squads and classes; each class receives instruction forty-five minutes each day during the forenoon, and the squads do "practical" work in the afternoon, for which each student receives from

5 to 8 cents per hour, according to his proficiency. At the Alabama State Normal and Industrial School the organization as to time is as follows:

MECHANIC ARTS.

- Sec. 1. Carpentry—3 classes, 8 hours daily, 3 days a week.
- Sec. 2. Printing—2 classes, 3 hours daily, 3 days a week.
- Sec. 3. Mattress making—1 class, 2 hours daily, 6 days a week.
- Sec. 4. Shoemaking—2 classes, 2 hours daily, 3 days a week.
- Sec. 5. Blacksmithing—3 classes, 2 hours daily, 3 days a week.

AGRICULTURE.

- Sec. 1. Farming and horticulture—2 classes, 2-3 hours daily 6 days a week.
- Sec. 2. Dairy and live stock—1 class, 2-3 hours daily, 6 days a week.

The Hampton and Tuskegee institutes have inaugurated the night school. These night schools are in session from 7 to 9 p. m. and are attended by a few persons who work during the day at some remunerated labor. At Hampton labor is required of all for the sake of discipline and instruction. Students in the day schools usually work during one school day each week and the whole or half of Monday, thus securing 4 whole days for study each week and from one and a half to two days of work. Work students remain on the place the entire year.

The mechanics arts course of the branch normal college of Arkansas Industrial University is a very complete expression of the bipartite arrangement of the mental and manual training in the curriculum of schools having such arrangements or advanced lines, and as such is given:

I. MECHANICS ARTS COURSE.

A CLASS.

First term.—English, 4; geography, 4; arithmetic, 4; shop work, principles of carpentry and joinery, ten hours per week.

Second term.—English, 4; arithmetic, 4; United States history, 4; shop work, wood turning, cabinet-making, ten hours per week.

Third term.—English, 4; arithmetic, 4; United States history, 4; shop work, pattern making, and moulding, ten hours per week.

SUBFRESHMAN CLASS.

First term.—English, 4; geometry, 4; physical geography, 4; shop work, moulding, and casting ten hours per week.

Second term.—English, 4; algebra, 4; physical geography and bookkeeping, 4; shop work, management of cupola, forging, ten hours per week.

Third term.—English, 4; algebra, 4; bookkeeping, 4; elementary physiology, 4; shop work, drawing, welding, tempering, 10 hours.

FRESHMAN CLASS.

First term.—Algebra, 4; English, 4; physics, 4; shop work, chipping, and filing, 10 hours.

Second term.—Algebra and geometry, 4; English, 4; physics, 4; shop work, drilling, turning, 10 hours.

Third term.—Geometry, 4; physics, 4; English, 4; shop work, planing, 10 hours.

SOPHOMORE CLASS.

First term.—Geometry, 4; chemistry, 4; general history, 4; shop work, ten hours, or care of engines and boilers, 10 hours.

Second term.—Plane trigonometry, 4; chemistry, 4; general history, 4; shop work, 10 hours, or care of engines and boilers, 10 hours.

Third term.—General history, 4; psychology, 4; civil government, 4; shop work, 10 hours, or care of engines and boilers, 10 hours.

EDUCATION OF THE COLORED RACE.

1029

STATISTICAL SUMMARIES.

Common school statistics classified by race, 1893-94.

State.	Estimated number of persons 5 to 18 years of age (the school population).		Per cent of colored.	Pupils enrolled in the common schools.		Per cent of the school population enrolled.	
	White.	Colored.		White.	Colored.	White.	Colored.
1	2	3	4	5	6	7	8
Alabama.....	327,400	280,800	46.15	190,305	115,709	58.13	41.23
Arkansas.....	312,100	121,000	27.94	209,109	76,050	67	62.84
Delaware (1891-92).....	39,850	8,980	18.40	28,316	4,858	71.06	84.09
District of Columbia.....	43,636	24,000	35.49	26,242	14,436	60.14	60.16
Florida.....	84,230	66,770	44.21	59,503	37,272	70.63	55.81
Georgia.....	357,800	335,900	48.41	262,530	174,152	73.37	51.84
Kentucky.....	539,770	92,460	14.62	394,070	73,381	73.02	79.38
Louisiana (1892-93).....	194,300	206,900	51.58	92,816	62,654	47.78	30.29
Maryland.....	247,400	71,400	22.38	166,248	38,598	67.19	54.06
Mississippi.....	208,500	303,800	59.29	158,685	186,899	76.40	61.51
Missouri.....	849,000	51,700	5.74	623,589	33,916	73.62	65.60
North Carolina.....	379,940	227,800	37.48	242,572	128,318	63.84	56.34
South Carolina.....	169,200	283,900	62.66	106,176	120,590	62.76	42.48
Tennessee (1892-93).....	462,100	156,000	25.23	368,481	94,980	79.72	59.50
Texas.....	693,800	212,500	23.45	463,888	134,720	66.85	63.41
Virginia.....	848,400	247,900	41.67	231,433	121,277	66.42	48.92
West Virginia.....	261,500	10,800	3.96	211,630	7,185	80.93	66.53
Total.....	5,518,290	2,702,410	32.85	3,835,593	1,424,995	69.50	52.72
Total for 1893-94.....	5,132,948	2,510,847		3,402,420	1,296,959	66.28	51.66

State.	Average daily attendance.		Per cent of the enrollment.		Number of teachers.	
	White.	Colored.	White.	Colored.	White.	Colored.
	9	10	11	12	13	14
Alabama.....	112,800	72,300	59.26	62.49	4,412	2,196
Arkansas.....					4,878	1,408
Delaware (1891-92).....	19,746	2,947	69.70	60.66	734	106
District of Columbia.....	20,224	11,124	77.07	77.05	626	310
Florida.....	38,752	25,386	65.13	68.13	2,151	772
Georgia.....	157,626	104,414	60.04	59.96	5,827	3,206
Kentucky.....	243,433	25,061	61.77	34.10	8,494	1,314
Louisiana (1892-93).....	65,352	42,018	70.42	67.05	2,333	911
Maryland.....	98,173	18,369	59.06	47.59	3,627	691
Mississippi.....	98,753	107,494	62.23	57.51	4,386	3,191
Missouri.....					13,766	755
North Carolina.....	154,361	75,940	63.63	59.17	5,285	3,075
South Carolina.....	77,987	87,128	73.45	72.25	2,636	1,958
Tennessee (1892-93).....	266,851	64,127	72.43	67.53	6,949	1,863
Texas.....	334,884	83,185	72.18	61.73	9,960	2,502
Virginia.....	137,451	66,423	59.40	54.76	6,113	2,100
West Virginia.....	131,279	4,102	62.03	57.10	5,909	206
Total.....			65.20	60.07	88,086	26,570
Total for 1893-94.....			63.83	62.42	78,903	24,072

Teachers and students in institutions, mainly other than common schools for the colored race.¹

A.

State.	Number schools.	Teachers.			Students.								
		Men.	Women.	Total.	Elementary.			Secondary.			Collegiate.		
					Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.
Alabama ²	10	52	40	113	712	774	1,653	466	319	785	51	12	63
Arkansas.....	6	21	14	39	128	143	271	181	129	310	12	2	14
Delaware.....	1	3	.....	3	.....	.....	.....	14	2	16	10	4	14
District of Columbia.....	4	80	19	103	.....	.....	.....	325	414	739	24	6	30
Florida.....	6	13	13	42	221	250	470	122	131	253	.....	.....	21
Georgia.....	21	51	62	131	1,246	2,416	4,208	685	729	1,414	99	30	129
Illinois.....	1	1	1	2	.....	.....	.....	6	15	21	.....	.....	.....
Indiana.....	3	3	3	6	303	374	677	49	80	129	.....	.....	.....
Kentucky.....	7	17	39	56	217	451	906	170	359	529	28	24	52
Louisiana ³	8	43	28	71	50	250	807	271	286	557	120	91	211
Maryland.....	4	14	10	24	27	20	47	177	180	357	16	4	20
Mississippi.....	9	12	10	60	464	573	1,037	513	258	771	40	62	102
Missouri.....	6	16	10	26	21	24	45	232	258	490	4	.....	4
North Carolina ⁴	24	72	40	143	703	1,293	1,996	945	1,121	2,066	91	13	104
New Jersey.....	1	.....	.....	.....	.....	.....	.....	.....	.....	54	.....	.....	.....
Ohio.....	1	12	6	18	.....	.....	.....	64	49	113	20	2	22
Pennsylvania.....	1	12	.....	12	.....	.....	.....	.....	.....	199	.....	.....	199
South Carolina.....	12	28	29	86	1,001	1,050	2,081	395	568	1,110	33	3	36
Tennessee.....	12	58	55	158	857	1,180	2,187	458	593	1,051	76	10	86
Texas.....	9	30	35	85	388	643	1,031	443	613	1,056	40	14	54
Virginia.....	12	35	80	159	442	710	1,052	607	570	1,177	.....	.....	.....
West Virginia.....	2	3	1	13	9	7	16	75	102	177	.....	.....	.....
Total.....	100	576	495	1,350	6,789	10,158	18,494	6,198	6,776	13,175	863	277	1,161

¹ Owing to the failure of some institutions to report the sexes separately, the total is frequently larger than it apparently should be.

² One school not reporting.

³ Two schools not reporting.

⁴ Three schools not reporting.

B.

Students studying to be teachers.....	5,940
Students studying to be nurses.....	95
Studying a learned profession.....	1,067
In industrial departments.....	8,050

There are, as shown in the foregoing table (A), over 33,000 pupils in the elementary, secondary, and collegiate departments of institutions which are very largely private corporations in character. At equally spaced intervals in the past these figures have been as follows:

Year.	Attendance.	Increase.
		Per cent.
1877-78.....	12,146	.....
1882-83.....	17,439	44
1888-89.....	23,952	37
1893-94.....	33,077	38
In 10 years.....	.....	172

In short, for every 100 pupils in this class of schools in 1877-78, there were 272 in 1893-94. It is very hazardous to compare institutions of "secondary grade" for whites with anything, even itself; but it appears probable that the increase in attendance of private schools for secondary institution from 1880-81 to 1888-89, was 13 per cent, and in the public high schools of cities 37 per cent. The question then is, are we to attribute this extraordinary increase in attendance, on the part of the negro, to dissatisfaction with the facilities afforded in the rural districts for obtaining an education? Great sums are given to these secondary institutions to instruct, lodge, and board the negro pupil, but with the announcement of the

offer is coupled the stern reminder that every one must labor, that no loafing will be allowed, as though the authorities had found themselves hampered by the presence of persons attracted to their institution by the desire for novelty and a childish fancy which allows itself to expect results without personal exertion. It is a very difficult task the institutions for the higher education of the colored race have set for themselves, but it is to their distinguished merit that the being in them is probably the best education that the negro receives, and it is probable that for many years they will be, outside of large towns of 10,000 or more inhabitants, the only place where his home and school surroundings are not repugnant to a sense of delicacy, not to say of decency.

	Post-office.	Name.	President or principal.	Religious denomination.
	1	2	3	4
1	Athens, Ala.	Trinity Normal School.	Miss K. S. Dalton	Cong.
2	Huntsville, Ala.	Central Alabama Academy	A. W. McKinney	M. E.
3	Marion, Ala.	Lincoln Normal School.	W. J. Larkin	Cong.
4	Montgomery, Ala.	State Normal School for Colored Students.	No report.	
5	Normal, Ala.	State Normal and Industrial School.	W. H. Council.	None
6	Selma, Ala.	Burrell Academy	Rev. A. T. Burnell	Cong.
7	do	Selma University	C. S. Dinkins	Bap.
8	Talladega, Ala.	Talladega College	Martin Lovering	Cong.
9	Tuskaloosa, Ala.	Stillman Institute	Rev. A. L. Phillips	Pres.
10	Tuskegee, Ala.	Tuskegee Normal and Industrial School.	Booker T. Washington	
11	Arkadelphia, Ark.	Arkadelphia Baptist Academy.	F. L. Jones	Bap.
12	do	Shorter University.	B. W. Arnett, jr.	Meth.
13	Little Rock, Ark.	Arkansas Baptist College.	Joseph A. Brooker	Bap.
14	do	Philander Smith College.	Thomas Mason	M. E.
15	Pine Bluff, Ark.	Branch Normal College of Arkansas Industrial University.	Joseph C. Corbin	
16	Southland, Ark.	Southland College and Normal Institute.	William Russell	Friends.
17	Dover, Del.	State College for Colored Students.	Weeley Webb	
18	Washington, D. C.	High School, 7th and 8th divisions.	F. L. Cardoso	
19	do	Wayland Seminary	G. N. P. King	Bap.
20	do	Howard University	J. E. Rankin	Nonsect.
21	do	Washington Normal, 7th and 8th divisions.	Lucy E. Moten	
22	Jacksonville, Fla.	Cookman Institute	Lillie M. Whitney	M. E.
23	do	Edward Waters College	Rev. John R. Scott	A. M. E.
24	Live Oak, Fla.	Florida Institute	Rev. P. P. McKinney	Bap.
25	Ocala, Fla.	Emerson Home	C. A. Buckbee	
26	Orange Park, Fla.	Orange Park Normal and Normal Training School.	Amos W. Farnham	A. M. A.
27	Tallahassee, Fla.	State Normal and Industrial College for Colored Students.	T. De S. Tucker	
28	Athens, Ga.	West Broad Street School.	Archibald J. Cary	
29	do	Jeruel Academy	John H. Brown	Bap.
30	do	Knox Institute	L. S. Clark	Cong.
31	Atlanta, Ga.	Gammon Theological Seminary.	Wilbur P. Thirkield	M. E.
32	do	Storrs School	Ella E. Roper	Cong.
33	do	Clark University	D. C. John	M. E.
34	do	Atlanta Baptist Seminary.	Rev. George Lale	Bap.
35	do	Atlanta University	Horace Bumstead	Nonsect.
36	do	Morris Brown College	A. St. George Richardson	A. M. E.
37	do	Spelman Seminary	Miss Harriet E. Giles	Bap.
38	Augusta, Ga.	Haines Normal and Industrial School.	Miss Lucy C. Laney	Pres.
39	do	The Paine Institute	Rev. George Wms. Walker.	Meth.
40	do	Walker Baptist Institute	G. A. Goodwin	Bap.
41	College, Ga.	Georgia State Industrial College.	R. R. Wright	
42	La Grange, Ga.	La Grange Academy School.	J. H. Brooks	M. E.
43	McIntosh, Ga.	Dorchester Academy.	Fred. W. Foeter	Cong.
44	Macon, Ga.	Ballard Normal School.	F. T. Waters	do
45	Roswell, Ga.	Roswell Public School.	J. L. Strozier	
46	Savannah, Ga.	Beach Institute	Julia B. Ford	Cong.
47	Thomasville, Ga.	Allen Normal and Industrial School.	Miss Amelia Merriam	do
48	Waynesboro, Ga.	Haven Normal Academy	E. C. Fairchild	
49	Calro, Ill.	Sumner High School	J. C. Lewis	
50	Evansville, Ind.	Governor Street School	John R. Blackburn	
51	Indianapolis, Ind.	Indianapolis High School (colored)	George W. Hufford	
52	New Albany, Ind.	Scribner High School.	W. O. Vance	
53	Berea, Ky.	Berea College.	Rev. William G. Frost	
54	Frankfort, Ky.	State Normal School for Colored Persons.	John H. Jackson	
55	Lebanon, Ky.	St. Augustines Academy.	Sister Mary Oswin	Cath.
56	Lexington, Ky.	Chandler Normal School	Fanny J. Webster	Cong.
57	Louisville, Ky.	Central High School.	A. E. Meyzeek	

of the colored race, 1893-94.

Source of support.	Teachers.			Students.																					
				Ele- mentary.			Sec- ondary.			Colle- giate.			Indus- trial.			Normal.			Profes- sional.						
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.				
5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26				
A. M. A				5	36	102	138	14	16	30															
F. A. & S. E. S.				4			167																		
A. M. A	1	5	6	55	83	138											5	5							
State	13	11	24		28	28	153	105	258	13	9	22	112	146	258	62	51	113							
A. M. A	2	6	8	115	117	232	3	2	5				75	47	122	25	60	85							
A. M. A	4	2	6				89	70	159	2	3	5						44	3		3				
A. M. A				12	215	287	502	38	25	63	8		8			4	8	12	10	2	12				
Pres. Ch.	2		2							28		28						25			25				
State and county	30	16	46	291	157	448	160	101	270							169	101	270							
A. M. E. Conf.				4	35	49	84	10	12	22								25							
A. M. E. Conf.	6	4	10				23	33	56						21	21			6		6				
A. M. E. Conf.	2	2	4				13	5	18	3	2	5						8							
A. M. E. Conf.	5	3	8				86	13	49	9		9						18			18				
A. M. E. Conf.	4	2	6	25	15	40	90	51	141				42	20	62	115	66	181			15				
So. Friends	4	3	7	68	79	147	9	15	24				16	40	56	25	33	58			16				
So. Friends	3		3				14	2	16	10	4	14									17				
City and Nation	12	7	19				140	320	460												18				
A. B. H. M	7	5	12				112	57	169							112	57	169	34		34				
City and Nation	61	7	68				72	12	84	24	6	30						169			23				
City and Nation			4				1	25	26							1	25	26			21				
F. A. and S. E. S.				5	78	128	206	35	30	65											22				
F. A. and S. E. S.	3	3	6	74	44	118	22	19	41												23				
A. B. H. M	3	5	8	30	35	65	25	46	71												24				
A. B. H. M	1	2	3													30	30				25				
A. M. A				11	80	43	82	13	5	18						13	5	18			26				
State	6	3	9				27	31	58				21	27	31	58	10	8	18		27				
State	1	1	2	177	233	410	16	21	37												28				
State	1	3	4	34	32	66	26	24	50							26	24	50			29				
State				4	85	154	239	3	1	4					6	75	81	3	1	4	30				
Endowment	4		4																8		31				
Endowment		7	90	167	257																32				
Endowment	12	4	16				372	42	44	86	14		14		314			51			33				
Endowment	1	2	3	86			86	94		94					12			57	13		34				
Endowment	5	2	7				274	46	3	49	18	5	23					99			35				
A. M. E	3	7	10				176	193	369	10	25	35						25	24		36				
A. M. E	1	11	12				546	546		56	56					375	375	17	17		37				
Pres				14	115	217	332	26	45	71							26	45	71		38				
M. E. Ch. So	4	2	6	40	25	65	63	64	127								61	50	111		39				
Baptist Aasn	3	1	4	41	63	4	24		24								6	87	93		40				
Baptist Aasn	10		10				43		43	57		57						47			41				
Baptist Aasn	1	1	2	40	51	91											10	15	25	1	42				
A. M. A	1	1	2	154	236	390	10	4	14												43				
A. M. A	2	2	4	100	360	460	12	28	40				45	370	415	2	9	11			44				
A. M. A				111	109	220	32	37	69												45				
A. M. A		8	8	113	135	248	5	38	43									1	1		46				
do		6	6	10	21	31	12	71	83				7	73	80						47				
do	2	4	6	50	67	117	55	100	155									55	100	155	48				
do	1	1	2				6	15	21												49				
do	1	1	2	283	342	625	16	28	44												50				
do	1	1	2				28	44	72												51				
do	1	1	2	20	32	52	5	8	13												52				
do	10	10	20				77	113	190	17	4	21	30	45	75		6	6			53				
do	3	3	6				27	56	83	11	29	31	22	54	76	33	59	92			54				
Sisters of Loretto		3	3			35	35		41	41											55				
A. M. A		10	10				238									50	125	175	5	14	19				
A. M. A	1	0	7	32	226	308	43	122	165												56				

a Not including 85 nurses.

	Post-office.	Name.	President or principal.	Religious denomination.
	1	2	3	4
58	Louisville, Ky	Christian Bible School	Adoniram Judson Thom- son.	Christ
59	Paris, Ky	Paris High School	J. C. Graves	No report.
60	Alexandria, La	Alexandria Academy	Rev. W. D. Godman.	
61	Baldwin, La	Gilbert Academy and Agricul- tural College.	No report.	
62	New Iberia, La	Mount Carmel Convent	L. G. Adkinson.	M. E.
63	New Orleans, La	New Orleans University	Edward C. Mitchell.	
64	do	Leland University	H. A. Hill.	
65	do	Southern University	(Suspended)	
66	do	La Harpe Academy	Oscar Atwood.	Cong
67	do	Straight University	George Lewis Staley.	
68	Baltimore, Md	Baltimore City Colored High School.	F. G. Wagner.	M. E.
69	do	Morgan College		
70	Hebbville, Md	Baltimore Normal School for Training Colored Teachers.	B. O. Bird.	
71	Princess Anne, Md.	Princess Anne Academy of Mary- land Agricultural College.	Sarah A. Dickey.	
72	Clinton, Miss	Mount Hermon Female Seminary.	J. B. Lehman.	Christ
73	Edwards, Miss	Lutheran Christian Institute.	E. D. Miller.	
74	Holly Springs, Miss.	Mississippi State Normal School.	C. E. Libby.	M. E.
75	do	Rust University	C. Ayer.	Bap.
76	Jackson, Miss	Jackson College	G. G. Logan.	Meth
77	Meridian, Miss	Meridian Academy	N. C. Owen.	
78	Natchez, Miss	Natchez College	Frank G. Woodworth.	
79	Tongaloo, Miss	Tongaloo University	T. J. Calloway.	
80	Westside, Miss	Alcorn Agricultural and Me- chanical College.	W. J. Rowley.	
81	Bowling Green, Mo.	Bowling Green High School.	J. H. Pelham.	
82	Hannibal, Mo.	Douglass High School.	Imman E. Page.	
83	Jefferson City, Mo.	Lincoln Institute.	G. N. Grisham.	
84	Kansas City, Mo.	Lincoln High School.	W. H. Hale.	Non S.
85	Mill Spring, Mo.	Hale's College.	Rev. P. H. Cool.	M. E.
86	Sedalia, Mo.	George R. Smith College.	Rev. W. A. Rice.	
87	Bordentown, N. J.	Colored Industrial School.	No report.	
88	Ashboro, N. C.	Ashboro Normal School.	F. S. Hitchcock.	Non S.
89	Beaufort, N. C.	Washburn Seminary.	D. J. Sanders.	Pres.
90	Charlotte, N. C.	Biddle University.	G. W. Herring.	
91	Clinton, N. C.	Clinton Normal Institute.	D. J. Satterfield.	Pres.
92	Concord, N. C.	Scotia Seminary.	P. W. Moore.	
93	Elizabeth City, N. C.	State Colored Normal School.	G. H. Williams.	
94	Fayetteville, N. C.	State Normal School.	Rev. John A. Saverger.	
95	Franklinton, N. C.	Albion Academy and Normal School.	Dev. R. S. Rives.	
96	Goldaboro, N. C.	State Normal for the Colored People.	Rev. J. D. Chavis.	Meth
97	Greensboro, N. C.	Bennett College.	J. O. Crosby.	
98	do	Agricultural and Mechanical Col- lege for the Colored Race.	Miss Lillian S. Cathcart.	Cong
99	Kings Mountain, N. C.	Lincoln Academy	D. P. Allen.	Non S.
100	Lumberton, N. C.	Whitin Normal School.	A. M. Barrett.	do
101	Pee Dee, N. C.	Barrett Collegiate and Industrial Institute.	H. C. Crosby.	
102	Plymouth, N. C.	Plymouth State Normal.	Rev. A. B. Hunter.	P. E.
103	Raleigh, N. C.	St. Augustine's School.	Charles S. Meserve.	Bap.
104	do	Shaw University.	C. C. Somerville.	
105	Reidsville, N. C.	City Graded School (col.)	William H. Golar.	M. E.
106	Salisbury, N. C.	Livingstone College.	Rev. J. Rumble.	Non S.
107	do	State Normal School.	J. A. Whitted.	
108	Warrenton, N. C.	Shiloh Institute.	F. T. Waters.	Cong
109	Wilmington, N. C.	Gregory Normal Institute.	Rhoden Mitchell.	Non S.
110	Windsor, N. C.	Rankin Richards Institute.	C. S. Brown.	Bap.
111	Winton, N. C.	Waters Normal Institute.	S. T. Mitchell.	A. M. E.
112	Wilberforce, O.	Wilberforce University.	Isaac N. Rendall.	Pres.
113	Lincoln University, Pa.	Lincoln University.	Martha Schofield.	Non S.
114	Aiken, S. C.	Schofield Normal and Industrial School.	Rev. G. M. Elliott.	
115	Beaufort, S. C.	Beaufort Academy.	do	Pres.
116	do	Harlison Institute.		

of the colored race, 1893-94--Continued.

Source of support.	Teachers.			Students.																			
				Ele- mentary.			Sec- ondary.			Colle- giate.			Indus- trial.			Normal.			Profes- sional.				
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.		
5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26		
Christ. Ch.....	2	...	2	27	...	27	6	...	6	22	...	22	58	
	1	7	8	108	190	298	17	27	44	...	...	...	...	...	...	...	...	...	...	...	59
F. A. and S. E. S.	8	10	18	44	146	190	11	8	19	...	...	...	20	60	80	...	...	...	...	...	60
	18	6	24	...	437	...	23	10	33	7	1	8	...	168	...	...	...	39	42	...	61
	4	3	7	...	...	...	107	127	234	43	19	62	150	146	296	28	16	44	...	...	62
	6	7	13	6	104	120	32	22	54	68	71	109	64	43	107	...	...	...	...	...	63
	7	2	9	...	60	...	98	119	217	2	...	2	...	173	...	...	...	10	...	10	64
	1	3	4	...	...	...	29	75	104	...	...	...	...	...	...	...	...	...	...	...	65
	4	4	8	...	...	...	113	61	174	16	4	20	8	7	15	...	...	82	6	...	66
	1	...	1	...	...	...	7	10	17	...	...	...	...	...	...	7	10	17	...	...	67
	8	3	11	27	20	47	28	34	62	...	...	...	...	...	100	34	45	79	...	...	68
Christ Ch.....	1	5	6	78	114	192	...	...	...	...	...	...	...	...	...	...	...	...	...	...	69
	...	...	...	10	10	20	39	34	73	...	...	...	...	...	...	...	...	...	...	...	70
	...	...	...	3	88	97	185	12	5	17	...	60	60	...	85	85	12	5	17	8	71
A. B. H. M.	6	4	10	67	94	161	20	10	30	7	2	9	...	...	...	...	...	...	...	...	72
F. A. & S. E. S. ....	...	...	...	6	...	...	79	57	136	...	...	...	...	...	...	...	...	...	...	...	73
	4	...	4	27	44	71	63	102	165	...	...	...	...	...	...	...	...	...	...	...	74
	1	1	2	24	58	82	26	28	54	...	...	...	...	...	...	...	...	...	...	...	75
	...	...	...	16	170	326	20	16	36	...	...	...	...	...	...	...	...	...	...	...	76
	...	...	...	13	...	...	254	6	260	33	...	33	291	2	293	...	...	...	...	...	77
	...	2	2	15	20	35	20	20	40	...	...	...	...	...	...	...	...	...	...	...	78
	...	2	2	6	4	10	15	20	35	...	...	...	...	...	...	...	...	...	...	...	79
	6	2	8	...	...	...	90	77	167	4	...	4	...	...	...	...	...	...	...	...	80
	3	1	4	...	...	...	25	62	87	...	...	...	...	...	...	...	...	...	...	...	81
F. A. & S. E. S.	3	1	4	...	...	...	25	20	45	...	...	...	...	...	...	...	...	...	...	...	82
	4	2	6	...	...	...	57	59	116	...	...	...	...	...	...	...	...	...	...	...	83
	...	...	...	...	...	...	...	54	...	...	...	...	...	...	...	...	...	...	...	...	84
A. M. A.	1	5	6	72	77	149	...	...	...	...	...	...	...	...	...	...	...	...	...	...	85
	12	0	12	...	...	...	203	0	203	57	0	57	...	...	...	...	...	...	...	...	86
Pres. Ch.....	1	1	2	...	...	...	40	44	84	...	...	...	...	...	...	...	...	...	...	...	87
	...	...	...	270	270	...	...	16	16	...	...	...	...	...	...	...	...	...	...	...	88
State.....	...	...	3	...	...	...	58	116	174	...	...	...	...	...	...	...	...	...	...	...	89
	...	...	3	20	20	40	15	51	66	...	...	...	...	...	...	...	...	...	...	...	90
	2	3	5	...	...	...	185	235	420	...	...	...	...	...	...	...	...	...	...	...	91
	...	...	6	35	53	88	24	51	75	...	...	...	...	...	...	...	...	...	...	...	92
F. A. & E. S.	5	5	10	5	...	5	92	106	198	...	...	...	...	...	...	...	...	...	...	...	93
State.....	7	...	7	...	...	...	30	19	49	7	...	7	...	...	...	...	...	...	...	...	94
A. M. A.	3	3	6	71	125	196	4	9	13	...	...	...	...	...	...	...	...	...	...	...	95
	1	1	2	6	15	21	16	25	41	...	...	...	...	...	...	...	...	...	...	...	96
	...	...	4	20	25	45	40	57	97	...	...	...	...	...	...	...	...	...	...	...	97
	...	...	3	...	...	...	50	111	161	...	...	...	...	...	...	...	...	...	...	...	98
B. H. M. S.	21	5	26	63	103	166	3	4	7	...	...	...	...	...	...	...	...	...	...	...	99
	2	0	2	139	147	286	5	9	14	...	...	...	...	...	...	...	...	...	...	...	100
State.....	10	7	17	...	...	...	64	63	127	10	4	14	...	...	...	...	...	...	...	...	101
	3	1	4	36	42	78	14	26	40	4	2	6	...	...	...	...	...	...	...	...	102
A. M. A. ....	...	...	8	30	30	60	20	45	65	...	...	...	...	...	...	...	...	...	...	...	103
	7	7	14	70	130	200	15	50	65	...	...	...	...	...	...	...	...	...	...	...	104
A. B. H. M.	2	1	3	25	50	75	10	25	35	...	...	...	...	...	...	...	...	...	...	...	105
	2	1	3	59	71	130	35	48	83	...	...	...	...	...	...	...	...	...	...	...	106
	12	6	18	...	...	...	64	49	113	20	2	22	51	82	133	...	...	...	...	...	107
	12	...	12	...	...	...	...	...	...	199	...	199	...	...	...	...	...	...	...	...	108
	9	3	12	88	100	188	52	145	197	...	...	...	...	...	...	...	...	...	...	...	109
Pres. Ch.....	...	...	8	184	196	380	1	7	8	...	...	...	...	...	...	...	...	...	...	...	110
	2	...	2	34	35	69	15	8	23	...	...	...	...	...	...	...	...	...	...	...	111
	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	112

Statistics of schools for the education

	Post-office.	Name.	President or principal.	Religious denomination.
	1	2	3	4
117	Camden, S. C.	Browning Industrial Home and School.	Nellie A. Crouch.	Meth.
118	Charleston, S. C.	Avery Normal Institute.	Morrison A. Holmes.	
119	do	Wallingford Academy.	Rev. T. A. Grove.	Pres.
120	Chester, S. C.	Brainerd Normal and Industrial Institute.	John S. Marques, jr.	do
121	Columbia, S. C.	Allen University.	Joseph W. Morris.	A. M. E.
122	do	Benedict College.	Rev. C. K. Becker.	
123	Frogmore, S. C.	Penn. Normal and Industrial School.	Miss L. M. Towne.	
124	Greenwood, S. C.	Brewer Normal School.	Rev. J. M. Robinson.	
125	Orangeburg, S. C.	Claffin University, Agricultural College and Mechanical Institute.	L. M. Dunton.	
126	Jonesboro, Tenn.	Warner Institute.	Anna R. Miner.	
127	Knoxville, Tenn.	Austin High School.	J. W. Manning.	
128	do	Knoxville College.	J. S. McCulloch.	U. Pres.
129	Maryville, Tenn.	Freedmen's Normal Institute.	L. H. Garner.	So. Friends.
130	Memphis, Tenn.	Hannibal Medical College.	Tarleton C. Cottrell.	
131	do	Lemoyne Normal Institute.	Andrew J. Steele.	
132	Morristown, Tenn.	Morristown Normal Academy.	Judson S. Hill.	
133	Murfreesboro, Tenn.	Bradley Academy.	F. G. Carney.	
134	Nashville, Tenn.	Central Tennessee College.	John Braden.	M. E.
135	do	Fisk University.	E. M. Cravath.	Cong.
136	do	Meigs High School.	R. S. White.	
137	do	Roger Williams University.	A. Owen.	Bap.
138	Austin, Tex.	Tillotson Collegiate and Normal Institute.	Rev. Wm. M. Brown.	
139	Brenham, Tex.	East End High School.	H. M. Tarver.	
140	Crockett, Tex.	Mary Allan Seminary.	Rev. John B. Smith.	Pres.
141	Galveston, Tex.	Central High School.	J. R. Gibson.	
142	Hearne, Tex.	Hearne Academy and Industrial Institute.	M. H. Brayles.	
143	Marshall, Tex.	Bishop College.	N. Nolverton.	Bap.
144	do	Wiley University.	I. B. Scott.	M. E.
145	Prairie View, Tex.	Prairie View State Normal School.	L. C. Anderson.	
146	Waco, Tex.	Paul Quinn College.	H. T. Kealing.	A. M. E.
147	Burkeville, Va.	Ingleaside Seminary.	Rev. Graham C. Campbell.	Pres.
148	Hampton, Va.	Hampton Normal and Agricultural Institute.	H. B. Frissell.	
149	Lawrenceville, Va.	St. Paul Normal and Industrial School.	Rev. James S. Russell.	
150	Longfield, Va.	Cuny College.	R. E. Kennedy.	Bap.
151	Manchester, Va.	Public High School (col.).	J. H. Blackwell.	
152	Norfolk, Va.	Norfolk Mission College.	J. B. Work.	United Pres.
153	Petersburg, Va.	Bishop Payne Divinity and Industrial School.	Rev. E. L. Goodwin.	P. E.
154	do	Peabody School.	James E. Shields.	
155	do	Virginia Normal and Collegiate Institute.	James Hugo Johnston.	
156	Richmond, Va.	Richmond Theological Seminary.	Charles H. Corey.	Bap.
157	do	Hartshorn Memorial College.	Lyman B. Tefft.	do
158	Staunton, Va.	The Valley Training School.	D. C. Deans.	
159	Farm, W. Va.	West Virginia Colored Institute.	John H. Hill.	
160	Harpers Ferry, W. Va.	Storer College.	N. C. Brackett.	

of the colored race, 1893-94—Continued.

Source of support.	Students.																													
	Teachers.			Ele-mentary.		Sec-ondary.			Colle-giate.			Indus-trial.		Normal.			Profes-sional.													
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.									
5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26									
M. E. Ch.....		4	4	70	40	110	9	56	65							9	56	65											117	
A. M. A.....				9	122	153	275	35	92	127						35	92	127											118	
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